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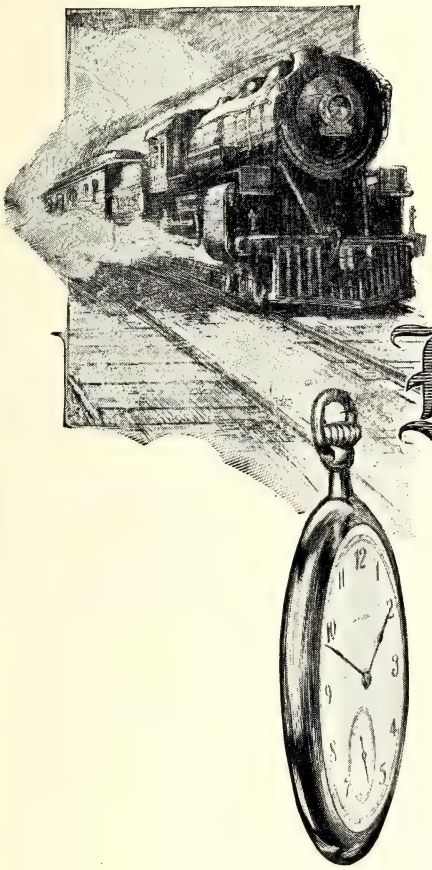

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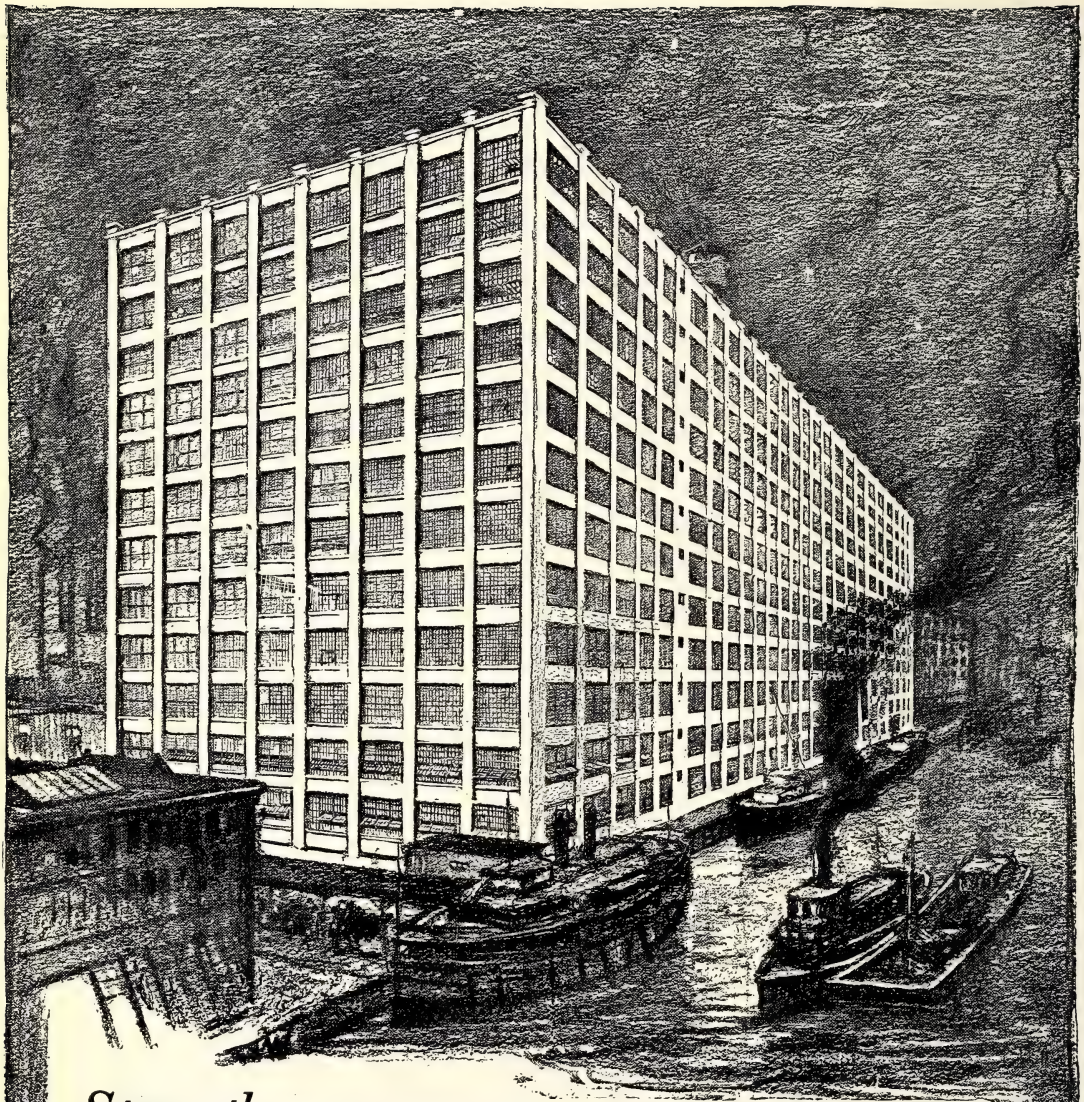

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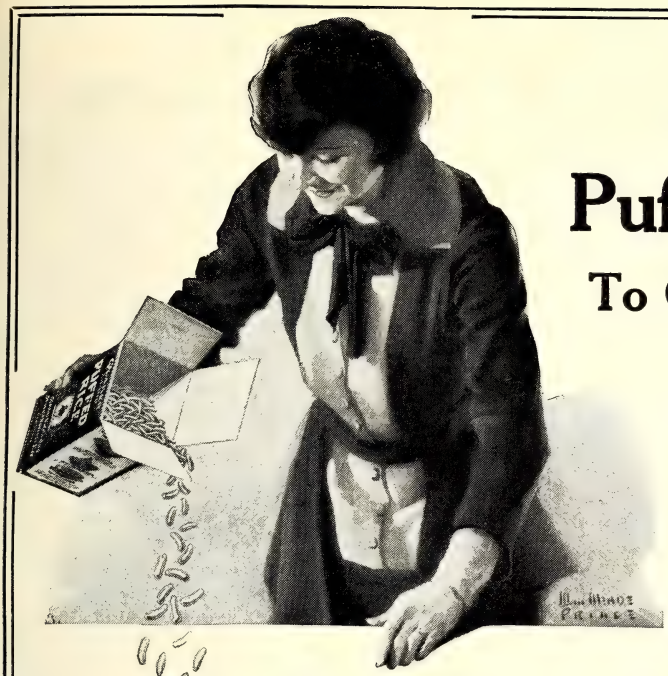

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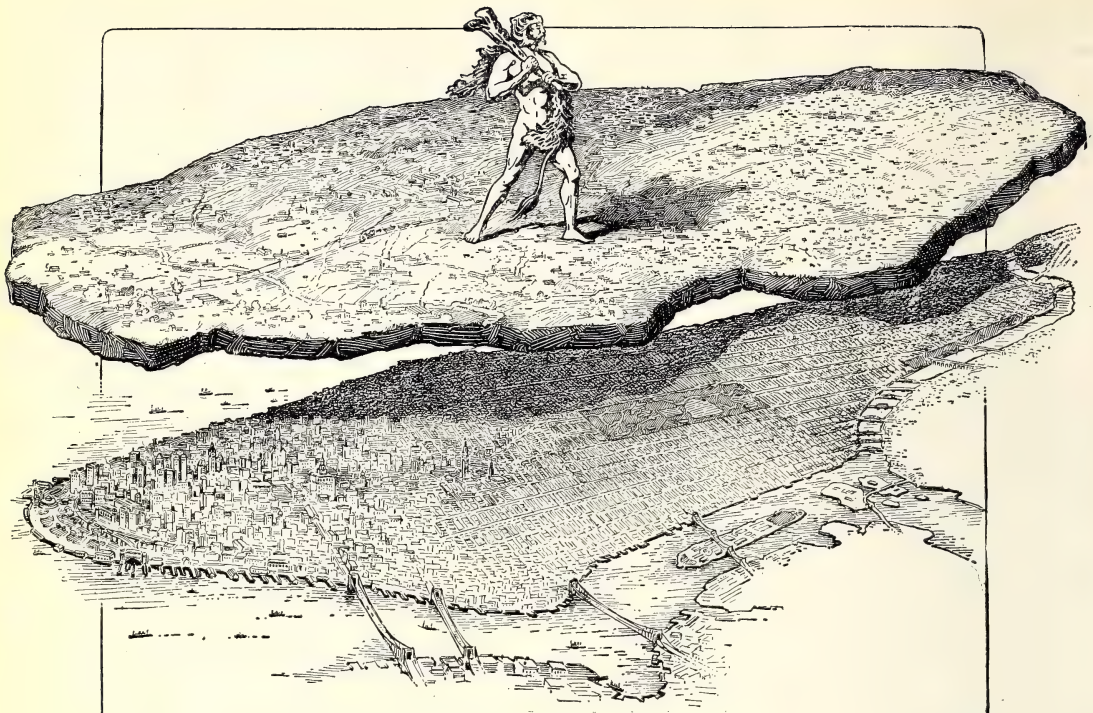

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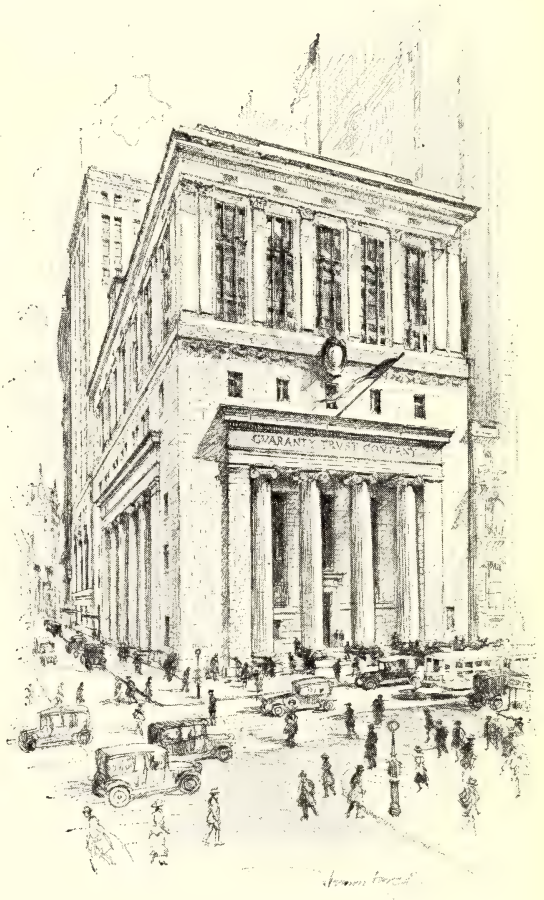

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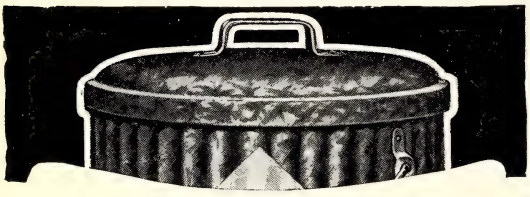

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IGHTY-FIVE years ago, a clipper ship sailed into New York harbor after a fast voyage of *three months* from the Far East, bringing a cargo for a newly established firm of manufacturing chemists, and since that time, as the most wonderful city in the world has grown, this New York firm has kept pace with it.

Today, drugs and chemicals bearing their name are just as well known in all parts of the civilized world as they are in New York.

During the years that have passed, keen judges at great expositions held in Paris, Calcutta, Ostend, Barcelona, Philadelphia, and St. Louis have awarded high honors to their products, and they are justly proud of their medals.

The trade-mark shown below is a guarantee of quality and is placed on every package of their goods. They manufacture the incomparable CALOX, the Oxygen Tooth Powder, and many other well known toilet and medicinal specialties.

McK&R

Ostend, 1888

New Orleans, 1885

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Shur-on

EYEGLASSES AND SPECTACLES

A Real Economy

YOU may be willing to pay more for the same comfort, style and optical correctness that Shur-ons give, but why should you, when Shur-ons combine all these qualities at reasonable cost?

The genuine, made only by Kirstein, bear the name Shur-on (or Shelltex, if shell-rimmed) in the bridge. Look for it at your dealer's.

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Shelltex-rimmed and rimless Shur-on eyeglasses and spectacles. Established 1864.

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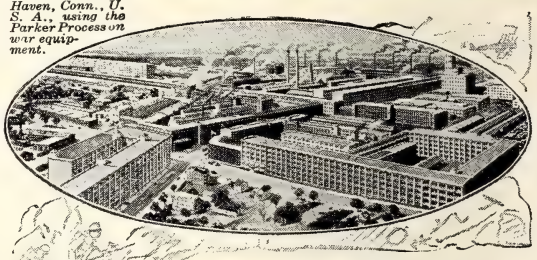
WASHINGTON, D. C.

After the Hun With RUST PROOF Weapons!

Plant of Winchester Repeating Arms Co. at New Haven, Conn., U. S. A., using the Parker Process on war equipment.



"OVER the Top" with Rust Proof weapons go the soldiers of Uncle Sam!

Passed by rigid government tests, the Parker Process is now being used on army rifles, bayonets, machine gun parts, hand grenades, bolo knives, trench knives, bicycles, motorcycles, mine cases, buoys, aeroplane parts, food containers, bridle bits, stirrups, truck parts and other equipment of war.

Government Endorsement Bears Out the Experience of American Industry

The endorsement of the Parker Process for use on war equipment by the U. S. and British governments must prove to the most skeptical that the Parker Process does prevent rust.

This official action bears out the experience of the leading American manufacturing concerns who have been protecting their products from rust by the Parker Process for several years.

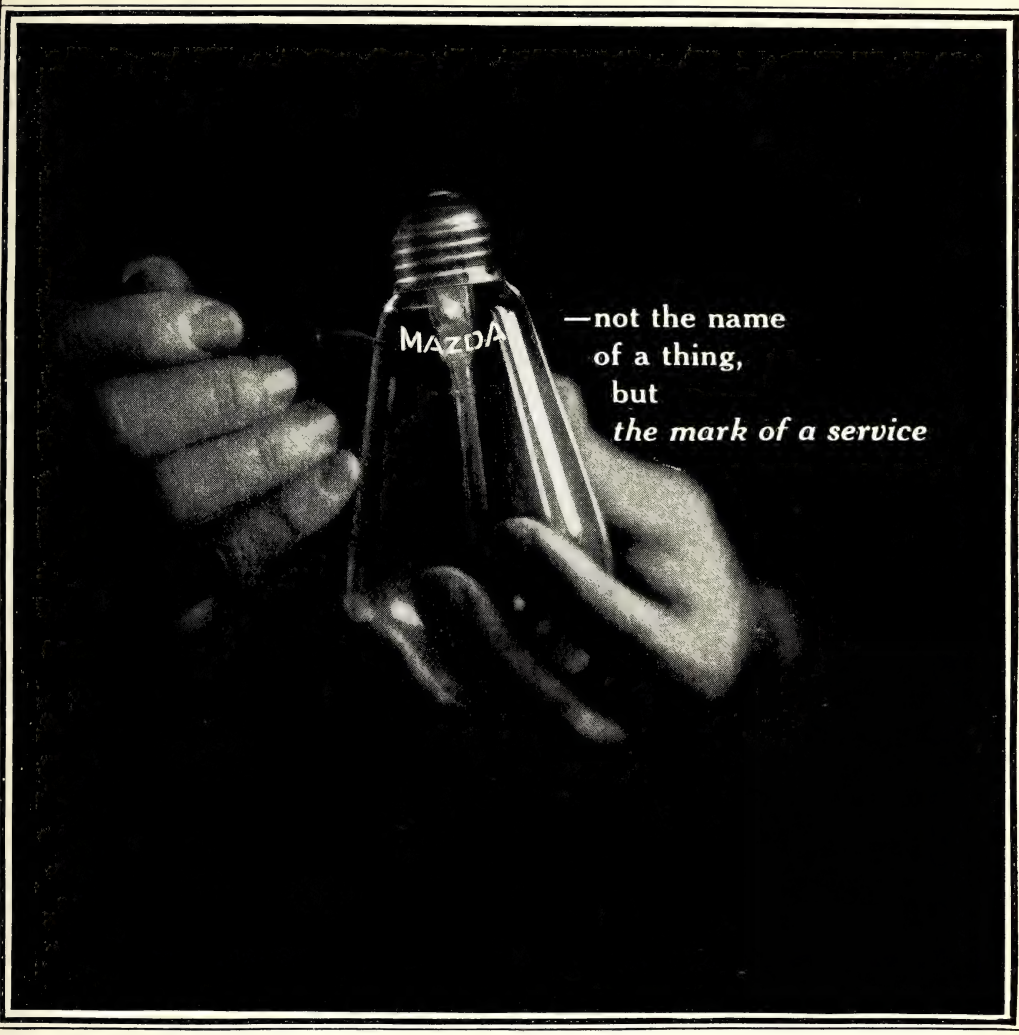
A Book on Rust Proofing for Industrial Executives

No matter what you manufacture—if you use steel or iron you will find it interesting to read the recently published Parker Process Book. This explains how the Parker Process is rapidly reducing the great toll rust takes annually from our steel supply—how it is now being used on metal articles from automobiles to fountain pens—from building hardware to typewriters—and how easily you can apply it to your own product in your own plant without interfering in any way with your present manufacturing plans. To be sure of a copy from the first edition dictate a note at once.

Parker Rust Proof Company
***of* America**
Detroit Michigan U. S. A.

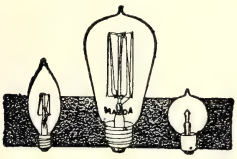
PARKER PROCESS

RUST PROOFS IRON AND STEEL



MAZDA

"Not the name of a thing, but the mark of a service"



A MAZDA Lamp for every purpose

MAZDA is the trademark of a world-wide service to certain lamp manufacturers. Its purpose is to collect and select scientific and practical information concerning progress and developments in the art of incandescent lamp manufacturing and to distribute this information to the companies entitled to receive this service.

MAZDA Service is centered in the Research Laboratories of the General Electric Company at Schenectady, New York. The mark MAZDA can appear only on lamps which meet the standards of MAZDA service. It is thus an assurance of quality. This trademark is the property of the General Electric Company

4343

RESEARCH LABORATORIES OF GENERAL ELECTRIC COMPANY

YOUNG AMERICA SALUTES ITS FLAG

Flags of the World

By Commander BYRON McCANDLESS and GILBERT GROSVENOR

A HANDSOMELY BOUND VOLUME of 150 pages, containing 1,200 flags in their full colors, 300 illustrations in black and white, the complete insignia of the uniformed forces of the United States, the international flags in use on land and sea, together with an epitomized history of each flag, and an authoritative history of the "Star Spangled Banner." In this book there are published for the first time the flags of each of the forty-eight United States in full colors and with complete descriptions based on original research and approved by the State officials.

The Federal Government put all of its resources at the command of the National Geographic Society in order to insure the correct reproduction of every military and naval flag in its proper design and coloring. The same coöperation was given by the Embassies and Legations of all the friendly countries represented. No complete collection of Pan American flags hitherto published has been correct, and the same is true of Asiatic flags.

This flag book is as authoritative as an official report, as delightful as fine fiction, and as beautifully illustrated as a gem of the printing art can be. Bound in stiff royal buckram, it is being placed in thousands of home libraries and is a gift par excellence.

Our military and naval forces find "Flags of the World" extremely useful, containing, as it does, the most complete and recent information on the important subject of flags and signals. Every soldier and sailor is glad to have one of these books, and to make them most suitable for this purpose a special edition has been printed on water-proof paper and bound in a FLEXIBLE KHAKI cover, which will stand the wear and tear of every-day use in the field or on board ship. This is a gift your boy in his country's service will appreciate.

CUT ON THIS LINE

Dept. H, National Geographic Society,
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Bound in Royal Buckram (Stiff Covers) or Military Khaki (Flexible Covers), postpaid, $2.00

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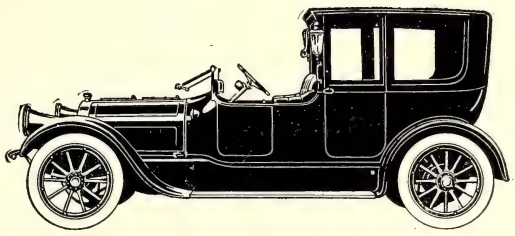


This Pierce-Arrow French Brougham is 6-cylinder, 48 horsepower, and 142 inches wheel-base. This is fast becoming the smartest type of car for City use. The body construction is brought down in the rear lower than on other types, giving a smarter appearance.

Pierce-Arrows

sold today will undoubtedly be efficient and serviceable cars ten years from today, and because of the soundness of their design they will also be good-looking cars ten years from today.

THE PIERCE-ARROW MOTOR CAR CO.
BUFFALO, N. Y.

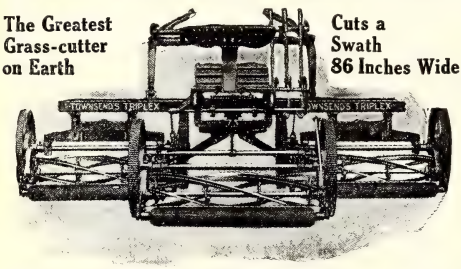
Encourage a Comfortable Longevity

¶By an immediate provision for a care-free old age for yourself, your wife, yourself and wife, or any one for whom you desire to anticipate and relieve the problems of old age.

Write the
NATIONAL LIFE INSURANCE CO., Mortpelier, Vt.
for the booklet, "Annuities—What They Are and Who Need Them."

TOWNSEND'S TRIPLEX

The Greatest Grass-cutter on Earth



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Floats Over the Uneven Ground as a Ship Rides the Waves

One mower may be climbing a knoll, the second skimming a level, while the third pares a hollow. Drawn by one horse and operated by one man, the TRIPLEX will mow more lawn in a day than the best motor mower ever made; cut it better and at a fraction of the cost.

Drawn by one horse and operated by one man, it will mow more lawn in a day than any three ordinary horse-drawn mowers with three horses and three men.

Does not smash the grass to earth and plaster it in the mud in springtime, neither does it crush the life out of the grass between hot rollers and hard, hot ground in summer, as does the motor mower.

The public is warned not to purchase mowers infringing the Townsend Patent, No. 1,209,519, December 19th, 1916.

Write for catalog illustrating all types of Lawn Mowers.

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Security located in well known prosperous farming community.

Value over twice loan.

Income from farm products five times interest.

First serial instalment of principal already paid off.

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Farm land of this character forms ideal security for investment and is of utmost importance to our country at this time.

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(ESTABLISHED 1865)
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Investments of Liberal Yield

INVESTMENTS affording a liberal interest return can now be made in sound securities of several types.

We suggest, as especially attractive, the following issues:

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Their solid worth is amply proven by the record of the Straus Plan—36 years without loss to any investor.

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Safety — assured payment of principal and interest.

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Municipal Bonds
Yielding 4½% to 6%

fulfil these rigid requirements and are free from the Federal Income Tax. Send for monthly list and booklet N-7. "Bonds As Safe As Our Cities."

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THERE is a sweetness about clothes washed with Ivory Soap that reminds one of the fragrance of a clover field. This is because—

Ivory's rich, copious, bubbling, lively lather cleans them thoroughly.

It rinses so easily that not a particle of the suds remains in the fabric.

And, most important, it has the pleasant, unobtrusive, *clean* odor of the highest grade materials of which soap can be made.

Not even Nature's own purifiers—sun, air and water—can counterfeit the distinctive freshness which makes the Ivory washed garment such a satisfaction.

IVORY SOAP..

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VOL. XXXIV, No. 1 WASHINGTON JULY, 1918

THE NATIONAL GEOGRAPHIC MAGAZINE

NEW YORK—THE METROPOLIS OF MANKIND

By William Joseph Showalter

Author of "The Panama Canal," "How the World is Fed," "Steel—the Nation's Greatest Asset," etc.

This is the first of a series of articles concerning the principal cities of the United States which will appear from time to time in the National Geographic Magazine. *In word and picture these articles will tell the story of what these cities are today, what problems they are facing, what futures they are planning, and what rôles they are playing in the nation's activities.*

WITH German submarines creeping up to the very portals of its busy harbor, with precautions being taken lest on some unguarded, moonless night an enemy hydro-airplane, laden with bombs of destruction, descend upon it out of the sky, the eyes of the whole world are focused upon New York. A city which the great war has made the earth's international trade center and civilization's crowning metropolis, Gotham now commands a new interest, arouses a new pride in its achievements, excites a new feeling of wonder, and stirs in every American breast a realization that it is a city of all the people, national in all its aspects and relations.

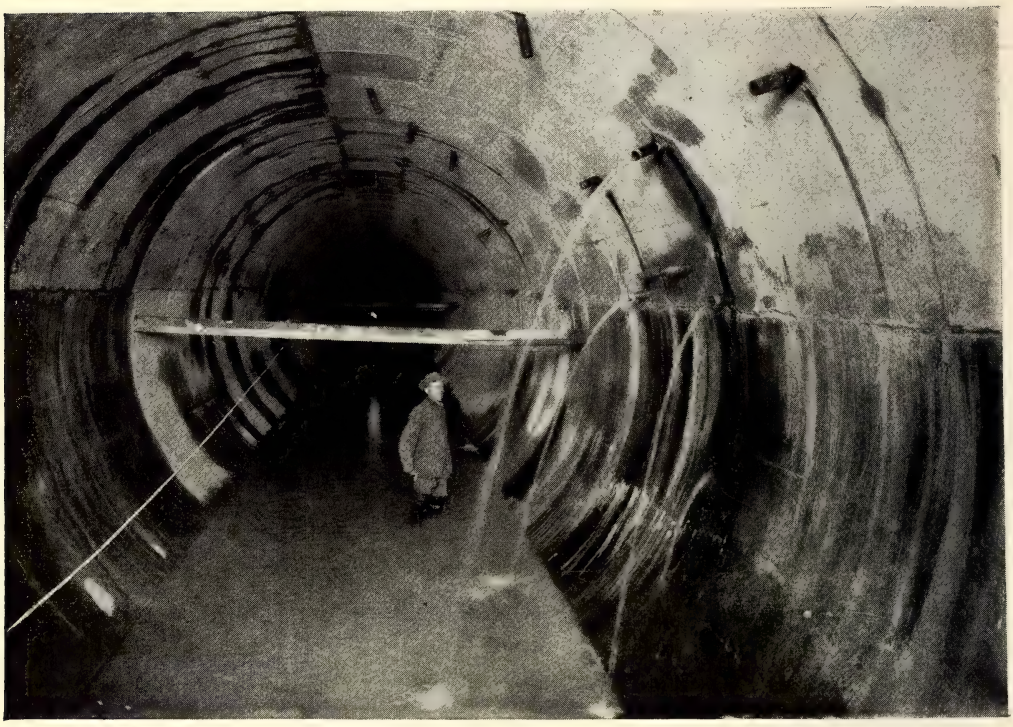
Conspicuous above every other phase of its greatness, of course, is its rôle as an international trade center. Last year exports passing out of its harbor had a greater value than the combined exports of Asia, Africa, and Australia. The imports coming through its customs lines exceeded in value those of the continents of South America, Africa, and Australia together.

For such operations as these, New York, perforce, must be a great metropolis. In population it outranks any one of half the nations of the earth, surpasses that of the entire continent of Australia, and matches the combined strength of the six westernmost States of the American Union. In annual expenditures it exceeds all except seven of the fifty-odd nations on the map. Its water system could supply the whole earth with drinking water, and its storage reservoirs hold enough to slake civilization's thirst for more than a year. Its electric transportation lines carry nearly twice as many passengers in twelve months as all the steam railroads of the United States. They could give every man, woman, and child living a ride every ten months—so much for the yardstick of comparison.

THE MAJESTY OF THE CITY'S SMALL THINGS

New York is of all cities the one where the majesty of small things is regarded as well as the greatness of large ones.

Who counts a nickel? Yet the greatest transportation system of the ages was built by nickels prospective, and lives on nickels realized. Who reckons a dime,



Photograph from Edwin Levick

A SECTION OF THE BIG TUNNEL THROUGH WHICH CATSKILL WATER PASSES UNDER NEW YORK

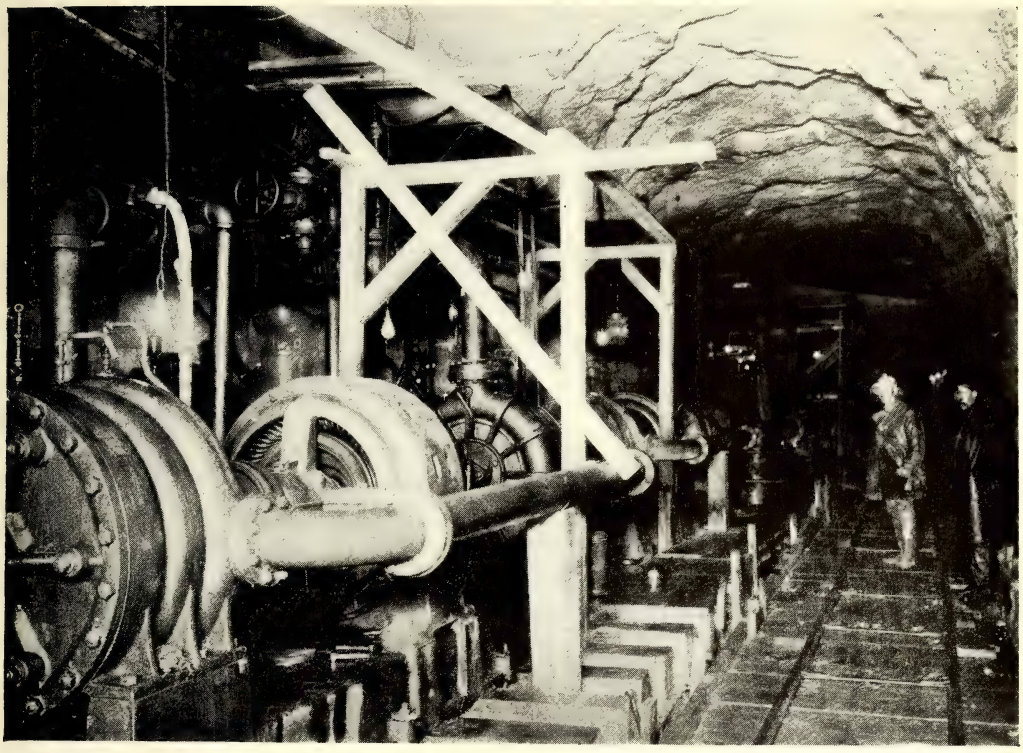
The man in the middle distance gives some idea of the tremendous size of the stream of water required for New York. The small streams flowing in are from underground springs. These were ultimately dammed back by grouting placed between the concrete lining and the solid rock.

which even the waiter in a quick-lunch room scarcely deems worth a "Thank you"? Yet the world's loftiest building, its crowning cathedral of commerce, was built out of the small margin of profit in ten-cent transactions. Who considers the dust in the street? New York has built up sixty-five acres of ground, valued at several million dollars, out of street sweepings. Who feels the dust and dirt that adhere to his shoes? However, more than seven tons of the housewife's enemy is carried by tramping feet into the subways every twenty-four hours.

THE COSMOPOLIS OF CIVILIZATION

One scarcely knows which to wonder at most—New York, the cosmopolis of civilization, or New York, the metropolis of the western world. It has more Irish and their sons and daughters than Dublin, more Italians and their children than has Rome, as many Germans and their children as Leipzig and Frankfort-on-Main together, while its Russian population by birth and parentage is greater than the combined populations of Riga and Dvinsk.

But New York's appeal is as much to the people of the United States as to those of the outer world. Glancing at the list of those born elsewhere whom Uncle Sam found living in the metropolis when he last counted noses, we discover that there are more Jerseyites in Gotham than in Passaic, Princeton, and Rahway combined; more Connecticut-born than in Danbury; more people of Massachusetts birth than in Taunton; more Ohioans than in Chillicothe; more Pennsylvanians than in Allentown or Altoona. Every State sends a quota of its people to become part and parcel of New York life, and perhaps a majority of the city's most



Photograph by Paul Thompson

KEEPING A TUNNEL SECTION OF THE CATSKILL AQUEDUCT FREE OF WATER

In excavating the tunnels for this aqueduct, thousands of underground springs were encountered, and electric pumps had to be installed to prevent accumulated water from interfering with the progress of the work.

influential people were born outside its limits.

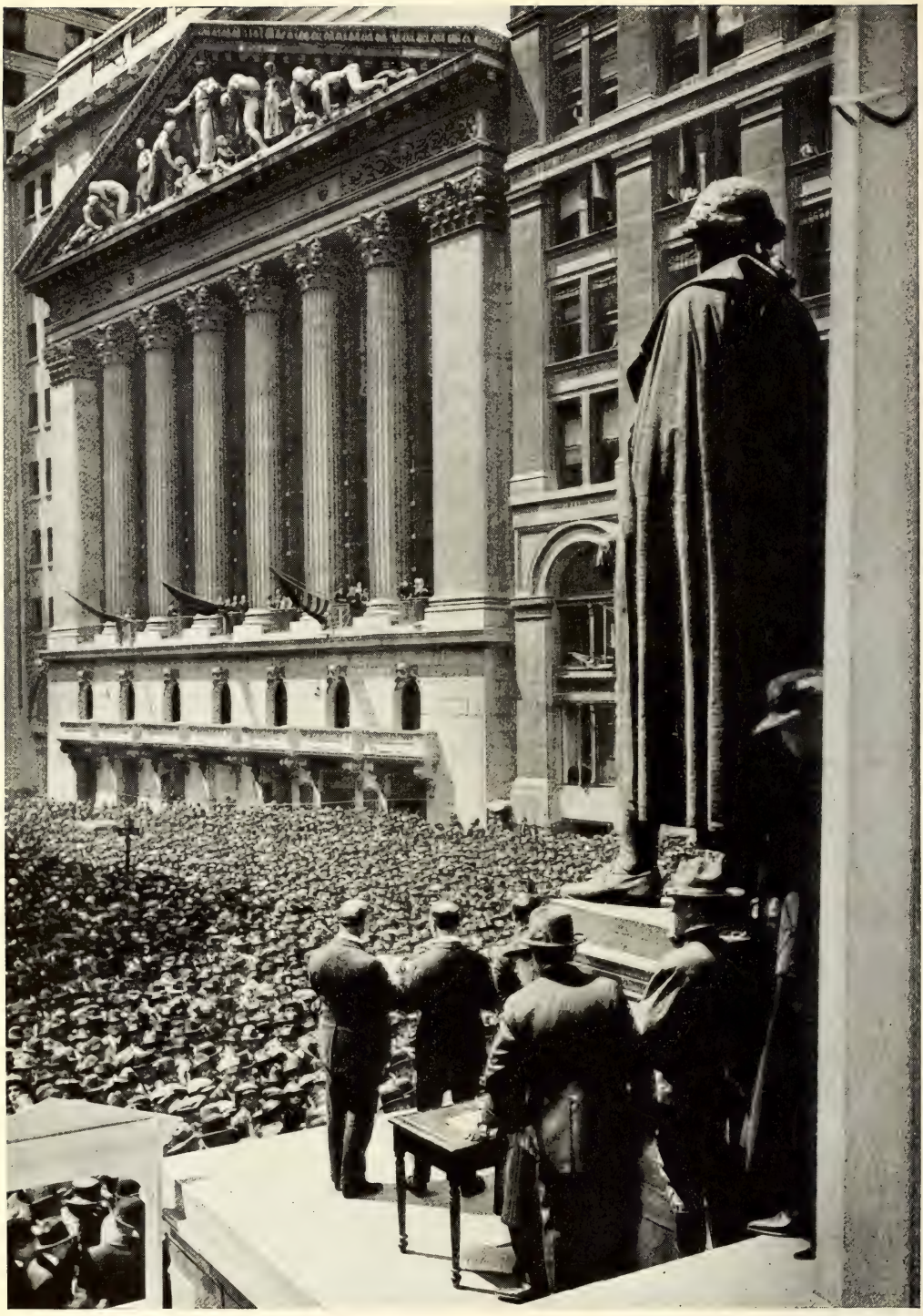
THE NIAGARA OF AMERICAN LIFE

New York is indeed the Niagara of American life. As over the great falls the waters of the continental basin rush down to the Atlantic Ocean, so through this city passes the vast river of humanity that seeks the sea of opportunity in the world beyond. It has been said that standing at 42d street and Fifth avenue long enough one will see every American who does a worth-while thing pass that busy corner. Certain it is that all the currents of human achievement in America do flow in that direction.

Below the falls is the whirlpool. As one stands above Niagara's gorge and watches the swirling waters, seemingly bereft of all sense of the direction where lies the sea, he wonders whether they will ever break the spell of the moment and find the channel they seek. So, also, standing at the vantage point of Times Square and watching the confusion of the rush hour, with its swirl, its eddy, and its drift, the onlooker marvels that in every drop in this whirlpool of humanity there is purpose.

Any story of New York begins with its people, and in its vast aggregation of humanity there is a wealth of interest.

Let those who have been pessimistic about our immigration study New York. It seems unbelievable; but if every resident whose parents were born in America were to leave the city its standing as the second most populous center in the world would not be affected. In other words, the number of immigrants and their children resident in New York is almost equal to the combined populations of Paris and Philadelphia and greater than the combined populations of Chicago and Berlin.



Photograph from Brown Brothers

THE NEW YORK STOCK EXCHANGE FROM THE STEPS OF THE SUBTREASURY DURING A LIBERTY-LOAN CAMPAIGN

A few figures will show the vast proportions of everything that relates to life in New York. Four transients arrive every second, a passenger train comes into the city terminals every fifty-two seconds, and a ship clears every forty minutes. A child is born every six minutes, a wedding takes place every thirteen minutes, and a funeral is held every fourteen minutes. There is a real-estate transfer every twenty-five minutes, a new building is erected every fifty-one minutes, and a fire occurs every thirty minutes. Every day three hundred and fifty people come to the city to live, and a hundred new telephones are installed.

Photograph by Social Press Association

FIGHTING THE BIG GRAIN FIRE AT DOW'S ELEVATOR, BROOKLYN, NEW YORK

High-pressure service in the downtown district in New York has all but banished the modern big fire. Giant electric pumps, capable of delivering thirty thousand gallons of water a minute, at a pressure of three hundred pounds to the square inch, represent the "big guns" of the fire department. Under such pressure windows are smashed in, partitions are torn down, merchandise is swept aside, and water is driven into every nook and cranny of a structure afire. The ten pumps of the high-pressure service can deliver a hundred streams at once. Veritable walls of water check a fire's effort to spread. Only a negligible number of the city's forty fires a day get beyond the buildings in which they originate.

Photograph by Paul Thompson

THE WOOLWORTH BUILDING

Rising 785 feet above the sidewalk, possessing forty acres of floor space, and having elevator shafts with a combined length of two miles, the Woolworth Building well fits its rôle of tallest building in the world. One of its chief successes is, according to architects, its scale. The architectural adornments which, viewed from the street, look like delicate and elaborate embroidery in stone, do not become coarse or crude when seen close at hand. One authority calls this civilization's greatest cathedral of commerce and another the world's foremost temple of trade. That it is both a beautiful and a substantial structure no one who has ever seen it outside and in will controvert.

© Kadel & Herbert

CONGESTED TRAFFIC ON FORTY-SECOND STREET: NEW YORK CITY

This view of a jam at Fifth avenue and Forty-second street shows what a tremendous task the New York traffic policeman has to encounter. One who stands for an hour at a busy crossing like this and watches an officer keep order from descending into chaos knows that in Gotham there is efficiency both high up and low down. Often there is more journalistic space devoted to one stray deed of one stray policeman than to the ninety and nine good deeds of the ninety and nine earnest guardians of the law who remain in the fold of conscientious service.

Three people out of every four in the great metropolis were born under alien flags or are the children of the foreign-born. But who that has studied the situation can gainsay New York's Americanism?

The story of how the one-fourth of the city's population that is of native ancestry has Americanized the three-fourths that is foreign in birth or parentage is revealed in the schools.

He who studies at first hand the processes of Americanization and citizen-building finds work being done which would stir the heart of the most unemotional observer. He realizes that all of

Photograph by Paul Thompson

THE SOAP-BOX ORATOR AND HIS AUDITORS

In no other city does the sidewalk Demosthenes thrive so well as in New York, and in no part of New York so well as in Madison Square. He is always against things as they are. His doctrines are those of the Bolsheviki, and his remedies would undoubtedly be worse than the disease; but he always commands an audience and never passes the hat.

what is called New York's politics, stories of graft and the like, are but the froth and foam which fleck the waves of the city's life, while beneath runs a deep current of progress and public spirit, which takes form in carefully conceived and splendidly executed health laws, in a school system that has accomplished wonders, in a water system surpassing anything of its kind on earth, and in a hundred and one other ways not quite so dramatic as the printed stories of its politics and graft, but none the less full of human interest.

THE PUBLIC SCHOOLS

Along with many other cities, New York long since learned that a vast majority of the children who attend public schools do not go to college afterward.

Photograph by Paul Thompson

GARMENT-WORKERS PARADING DOWN MADISON AVENUE: NEW YORK CITY

Thousands of such humble folk as these find habitations in brownstone fronts that once were homes of the rich. The rich, fleeing with the approach of business, went uptown and duplicated their downtown brownstone fronts, and so millionaire mill-owner and poor garment-worker may live alike behind a brownstone front, the one above Fiftieth street and the other below Twenty-third.

In times gone by all elementary education was planned to fit boys and girls for colleges, and those who couldn't continue in the appointed channel found themselves half fitted for college, but not at all fitted for life. Then some one proposed that boys and girls whose education was almost certain to be limited should spend their school days preparing for their life work rather than for the college they would never be able to attend.

From that suggestion developed the idea of vocational education, which is now accomplishing wonders. Perhaps more than any other one agency, it is helping to transform in heart and action the alien life of the metropolis into part and parcel of our body politic. The immigrant's children are being fitted for that economic independence which comes with skilled hands instead of being sent forth from school with untrained hands and poorly trained minds.

A day spent in visiting New York's prevocational and vocational schools gives one much heart and hope. Go with me down on the lower East Side, where the tenement flourishes in all its fabled glory, and visit a prevocational school.

Photograph by Kadel & Herbert

FIFTH AVENUE AND FORTY-SECOND STREET CROSSING

"Step lively" is the spirit of New York. The crossing policeman wants you to do so, the crowd steps on your heels if you do not, and the subway car door goes shut in your face if you are slow; for New York is too big to wait for anybody. One who lives there must be in a hurry, and the drones, whether in business, going to Coney Island, strolling up Broadway, or wherever they may be or whatever their circumstance, are always in people's way. This unusual photograph was made from a building opposite the Public Library.

Here we see children studying the things we studied in the little red school house, with touches of nature added here and there. There is a constant effort to grade the boys and girls, so that each child finds full scope for his capabilities.

The backward children are withdrawn from the regular classes, as are also the especially precocious ones. To go into a class-room where the precocious kiddies hold sway is to see a lot of high-school heads on sixth-grade bodies. It seems almost uncanny to hear such youthful pupils discussing the relations of Japan to the Siberian situation or America's attitude in the matter of after-the-war trade.

THE MANUAL-TRAINING COURSES

When the average boys and girls reach the age of thirteen, they are ready to take up something beside text-books. Aiming alike to prevent square pegs from getting into round holes and to lay the foundations for life training, the prevocational school has many lines of work for boys and girls.

In a boy's department are to be found courses in machine-shop activities, in sheet-metal work, electric wiring, plumbing, woodworking, mechanical drawing, sign painting, garment designing, and printing. Each boy has a number of metal tags like those used in every modern machine shop. These are given in exchange for the tools they desire and are claimed when the tools are returned.

The boys take three courses, which they select with the aid of their teachers. For the fourth term they go back to the one in which they desire to specialize. While they are taking these courses all book work is planned to dovetail with the handwork both in subject-matter and in hours. The sheet-metal worker's arithmetic will deal with sheet-metal workers' problems, and the electric wiring student's science will involve basic electrical principles. The girls' departments have courses in dressmaking, millinery, homemaking, etc.

When the children finish their work in the prevocational schools, some of them drop out, but most of them go to the vocational schools, where they carry on the course already begun. These are high schools, training hand and mind together, and fitting the pupils for their life work.

A boy who finishes the plumbing course at the Vocational School for Boys is a real plumber, and the boy who puts up his building and wires it with every known sort of wire installation can give pointers to many a man who has spent a quarter of a century as an electrician.

FITTING GIRLS FOR LIFE'S RESPONSIBILITIES

For girls, vocational education reaches its highest expression at Washington Irving High School. Here one sees a combination of head, heart, and hand training that transforms the tenement child into a young woman who possesses poise, who has a keen, alert, straight-thinking mind, who knows the responsibilities of life, and who has been imbued with a spirit of high patriotism, right purpose, and clean living.

To teach 5,600 girls every day, to train them in mind and body as Uncle Sam is training his armies at our soldier cities, is a great task. To take that many immigrants' daughters and make them orderly, as jealous of the school's discipline as if they were its responsible head, quiet and dignified in lunch-room, class-room, and corridor, gracious as hostesses to visitors and in their auditorium work, and as patriotic as if every line of their descent lay through Williamsburg or the *Mayflower*—that is a work inspiring in its proportions and rich in its results.

With its motto the three big "I's" of life—Intelligence, Industry, Integrity—Washington Irving High School truly educates head, hand, and heart. A four-year academic course, a four-year librarian's course, a three-year commercial course, a three-year dressmaking and costume-designing course, and a three-year industrial arts course are provided.

Go down into the big auditorium and see several hundred girls in a war-savings stamp meeting, and watch them on the stage making posters. Many a veteran "chalk-talk" artist would envy their work. In the design-drawing work the Washington Irving girls produced last winter successes in commercial art that will be in evidence all over the United States before a year has passed, for merchants and manufacturers in search of

Photograph by Kadel & Herbert

FIFTH AVENUE LOOKING NORTH FROM FORTY-SECOND STREET

This great thoroughfare has been preëmpted by Fashion and the Shopper. Heavy traffic is rigidly excluded.

new ideas purchased from this source designs for wall paper, rugs, print dress-goods, etc., and were delighted to obtain them.

THE PREPONDERANT FOREIGN ELEMENT IN NEW YORK'S SCHOOL ARMY

When one reflects that seven out of every nine children of school age in New York are of immigrant parentage, a situation is disclosed that might be termed startling, especially when it is remembered that the school army of Greater Gotham is so large that if it marched ten abreast in close formation the front rank would be boarding a North River ferry-boat when the rear guard was crossing the Schuylkill out of Philadelphia.

It is a staggering task which confronts the city in Americanizing such huge numbers of youthful foreigners. Indeed, did it not happen that New York is so rich—with assessed values greater than those of the next seven cities in America combined—it might well call upon the national government for aid. But with such wealth it is bearing the burden alone and is doing it admirably.

One might go on to the length of a whole article writing about striking features of the New York public schools, which stand first among all the agencies for Americanizing the immigrant's children. How these schools take seventy-odd tongues and substitute good English; how they not only labor to fit boys and girls for intelligent and useful places in the country's great industrial system, but also through employment bureaus bring the trained pupil and the open job together; how they provide every year for the children of an added population equal to that of Memphis, Tennessee—none of these achievements or problems can be described here.

NEW YORK'S GUARDIANSHIP OF THE PEOPLE'S HEALTH

Next to the education of its children for their life work and the maintenance of order, a community's most important task is to care for the public health. And here again the big city shines.

If there ever was a city on the face of the globe which to superficial judgment

Photograph from Edwin Levick

A MODERN APARTMENT HOUSE OF THE TYPE PREVAILING ALONG RIVERSIDE DRIVE

Nearly four million people live in "tenements" in New York, for under the law a "tenement" is anything from one of the frowsy seven-story affairs in the lower and poorer East Side, overrun by poor children, to the fashionable apartment house on Riverside Drive, open only to tenants who have big bank rolls but no children.

would seem a paradise for all the germs in the catalogue that city is New York. From every continent, every clime, and every country have come its inhabitants. For the most part those who come from foreign lands are as ignorant about the germ theory of disease when they arrive as a primary pupil is ignorant about differential calculus.

Every one knows that crowding tends to magnify the problem of public health. "Too thick to thrive" is an alliterative phrase which diagnoses the health situation in many an overcrowded population center. When it is remembered that on the average square mile in Manhattan there are nearly as many people as in the whole State of Nevada, and that down

Photograph by Paul Thompson

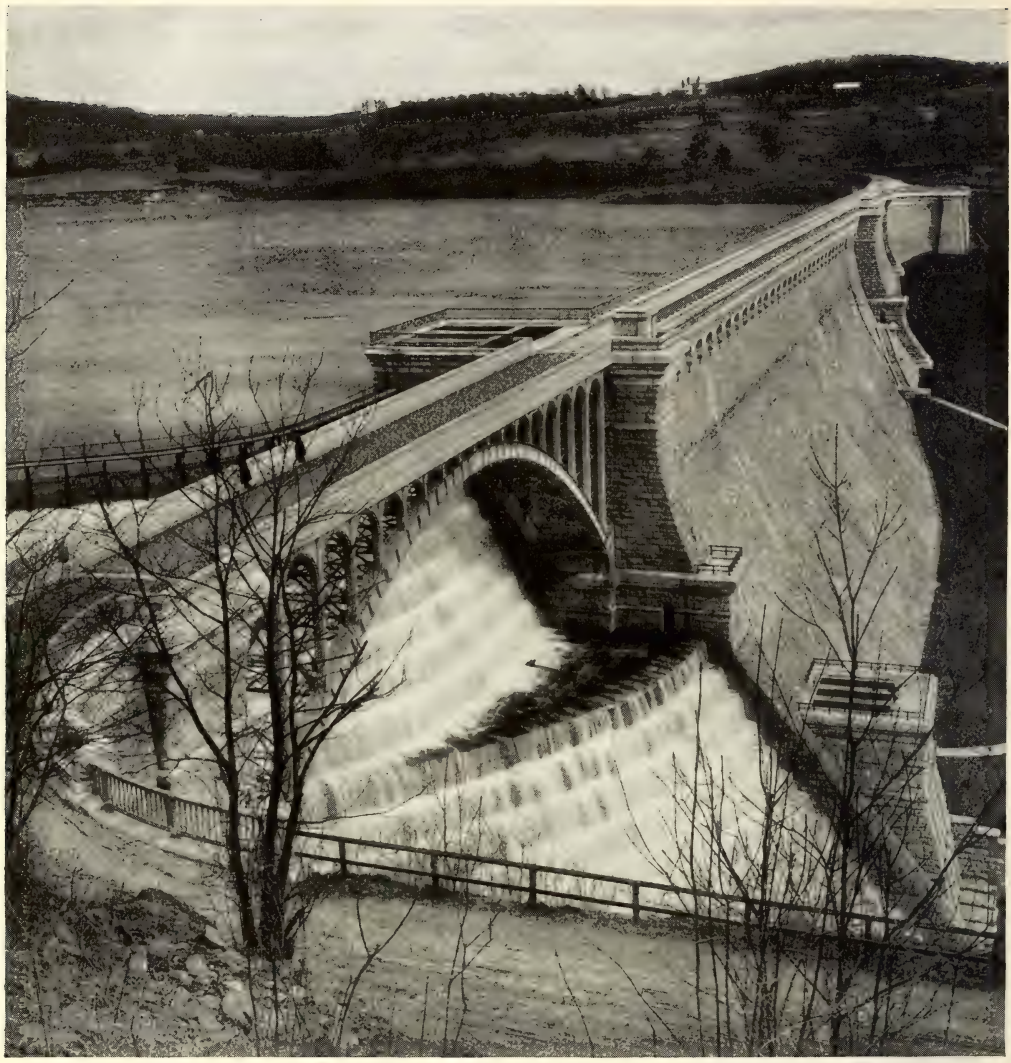
THE CURB MARKET IN BROAD STREET: NEW YORK

A section of the street is roped off, and within this area, on stirring market days, there gathers one of the most wildly gesticulating crowds imaginable. They are the curb brokers, who buy and sell securities, most of which are not listed by the more conservative exchanges. In the squat little buildings in the foreground are the offices of many of the curb brokers, and the sign-language that passes between windows and street is as eloquent in its unintelligibility to the looker-on as it is in dollars and cents to the participants.

Photograph from S. H. Macfarlane

ONE OF NEW YORK'S GREAT HOTELS

This structure is reputed to be the largest hotel in the world. It has 1,700 rooms. The metropolis has half as much invested in hostelries as Uncle Sam invested in the Panama Canal. Within a single square mile there are enough hotels to house and feed 50,000 people. They employ three people for every five they entertain. No other great city receives so many sojourners, who are both able and willing to pay for every creature comfort; and there is no taste so expensive that a Gotham hostelry cannot fill its demands. Every night the food and drink bill of the hotels and restaurants amounts to more than a million dollars.



Photograph from Edwin Levick

THE CROTON DAM AND SPILLWAY OF THE NEW YORK WATER SUPPLY

The Croton water system, which was New York's main reliance before the Catskill waters were tapped, is not small, even for a big city. There are probably not fifty cities on the globe for which it could not furnish an adequate water supply. But for New York it became so inadequate that the city was face to face with a real water famine repeatedly.

in the East Side the population is many times as dense, the wonder is that it is possible to prevent the city from being a pest hole, with every infectious disease endemic, from anthrax and ague to typhus and cholera. Furthermore, the elevated, the subway, and the surface lines would seem to afford unexampled opportunity for the spread of disease.

But in spite of these conditions, New York is one of the healthiest cities in America. Compare Manhattan's 1916 death rate of 13.60 per thousand with Baltimore's 18.18, or Washington's 18.01, and it will be realized that to offset its overcrowding, its East Side ignorance, and its vast daily intercourse, New York has a health service second to none in the world. Nowhere else is there to be found a more splendid tribute to the success of

© Keystone View Company

NEW YORK SKY-LINE FROM JERSEY DOCKS

It has been said that there is no wave on the sea of world commerce but sends a ripple to London. Equally true is it that no land suffers without bringing a pang of pain to New York's heart, for all countries have contributed of their peoples, and all lands of their tongues, to make this the modern Rome toward which all roads of migration lead.

preventive medicine in combating "catching" diseases than in the metropolis.

INCREASING POPULATION, DECREASING DEATH RATE

Since 1865 New York territorial expansion has been important, but the increased population per block has been even more noteworthy. Increasing density of population always means multiplying problems of sanitation, but the health authorities have met every such increase with a decrease of death rate.

There were proportionately only half as many deaths from pulmonary tuberculosis in the decade from 1906 to 1915 inclusive as there were from 1876 to 1885. There were only one-third as many deaths from typhoid, one-fifth as many from diphtheria, one-sixth as many from scarlet fever, and only half as many deaths of babies under one year of age.

Photograph by Paul Thompson

LOOKING DOWN LOWER BROADWAY, ACROSS THE BATTERY, BOWLING GREEN, AND GOVERNOR'S ISLAND, TOWARD AMBROSE CHANNEL AND THE SEA

The New York of the society novelist may be found if one seeks such things, as is the case with every cosmopolitan city. But the New York that makes the education of its youth its first concern, that spends millions for public recreation, that possesses one of the lowest death rates in the world for cities of more than a million people, that in normal years absorbs a hundred thousand foreigners into its body politic—that New York is too prosaic for sensational stories, and so the world's attention is focused upon the one withered petal of human frailty rather than upon the beautiful blossom of civic achievement.

Was there ever more striking evidence of the immense contribution which the science of sanitation makes to the welfare of mankind than those figures? With every element of natural conditions in New York tending to promote the spread of diseases, the health officer has not only held them in check, but has reduced their harmful power to a half, a third, a fifth, and in one case to a sixth of their former potency.

Such a tremendous success in the mastery of "catching" diseases—under which term I include those that are infectious with those that are contagious—forms an epic in human progress.

There are enough babies born in New York City every year to populate four cities like Charlotte, North Carolina, Oshkosh, Wisconsin, Roanoke, Virginia, Hamilton, Ohio, or Springfield, Missouri. As many people in New York die annually as live in four cities like Elkhart, Indiana, Leavenworth, Kansas, Beverly, Massachusetts, or Raleigh, North Carolina. So many births mean an unrelenting fight and eternal vigilance to keep down infant mortality.

THE PRICE OF HEALTH

New York has found, in the words of its Commissioner of Public Health, that it is possible to purchase public health. He maintains that the health officer of a progressive American municipality should not be limited, even to the smallest fraction, in the service or funds necessary in his work any more than the builder of a suspension bridge should be expected to provide a safe span with three cables instead of the four which conditions demand. "Within natural limitations," says this authority, "a city can determine its own death rate. Health insurance is as reliable and profitable an investment for the municipality as it is for the individual."

New York's chart shows how the general death rate has been hammered down and down under the application of modern methods. In 1874, 27.90 people out of every thousand died—a normal year for those times. In 1917, 13.76 out of every thousand died. In other words, New York is saving about 80,000 lives a year through the application of the laws of scientific sanitation.

Eternal vigilance is the price of health in a congested community like New York. No man may keep a stable without a permit, and no permit is forthcoming until thorough provision against flies and filth accumulation has been made.

The water supply is carefully watched and samples frequently analyzed to make sure that the city never drinks a mixture of disease germs and water, as so many municipalities do. Even the water-boats which deliver drinking water to ships in the harbor, the bottled waters that are sold, the drinking waters on railroad trains and river steamers are constantly under the scrutiny of the department.

The mosquito is fought as assiduously here as it was at Panama. Rats are guarded against; the ordinance against common towels and drinking cups is rigidly enforced; and in a hundred ways the health department makes the city inhospitable to the germ army that ever seeks a foothold in hapless human systems.

The activity of the health department which has the most widespread appeal, however, is the work of the Bureau of Child Hygiene. More than 140,000 visits of the stork occur annually, and to give the little pilgrims a chance to grow up and become useful Americans is one of the city's principal concerns. Only two decades ago one out of every five of the tiny kiddies lost the hard fight against the diseases of infancy before it was a year old, and went to tenant a tomb instead of living to gladden a home. Today, however, with the health service as its ally, the baby army goes marching on, losing only one out of ten of its number.

GUARDING THE CHILD'S MILK SUPPLY

Knowing that the germ army attacks the child army mainly through the milk supply, some sixty infant's milk stations are maintained, and here the mothers of the children come for wholesome milk and for instruction. The first thing taught is that the breast-fed baby has a much better chance to win its battle for existence than the one fed on cow's milk, and thousands of mothers are thus induced to give up their intention of rear-

Photograph by Paul Thompson

INTERIOR OF THE GRAND CENTRAL STATION: NEW YORK CITY

Every day some three hundred thousand passengers arrive and depart through the railroad stations of New York, where nearly one-fifth of the railroad mileage of the United States finds a seaboard terminal. Such tremendous crowds call for vast stations. The Grand Central Station, covering 79 acres of ground, has public rooms where 30,000 can be accommodated at a time without crowding. During its construction the eight hundred daily trains, conveying 100,000 passengers, continued to enter the old structure on the same site.

© Helen D. Van Eaton

WHERE BULLS AND BEARS FIGHT IT OUT, WITH LAMBS AS INNOCENT BYSTANDERS: THE "FLOOR" OF THE NEW YORK STOCK EXCHANGE

It is asserted that no other feature of the newspapers of the world is so widely read as the New York financial column, which deals principally with happenings that have their inception in this big room.

ing their children as "bottle babies." Nearly 50,000 kiddies visit the milk stations every year and disease germs have a hard road to travel to get into their milk.

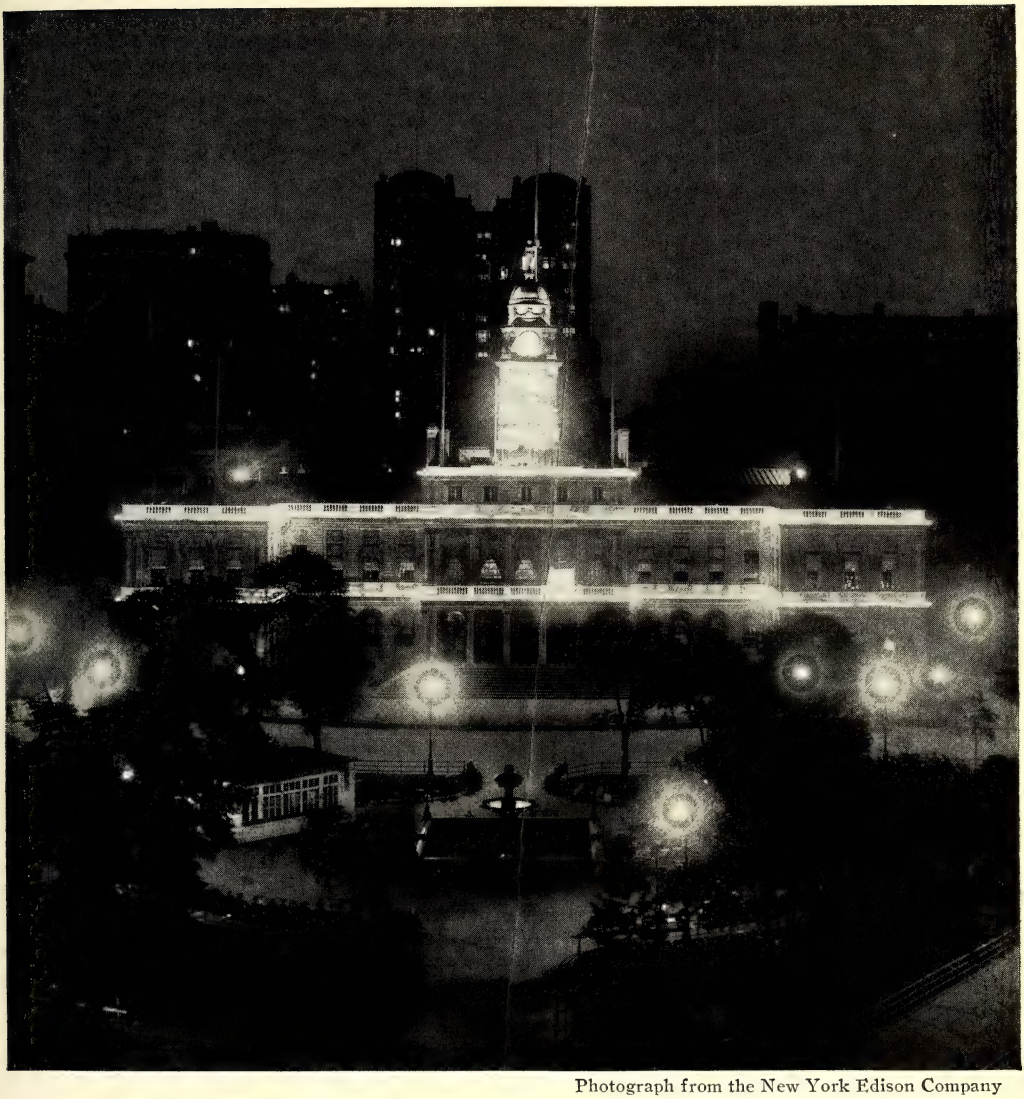
The health department endeavors to get into touch with the mothers in the poor districts as early in the prenatal period as possible, and by its visiting nurse service gives the babies the boost of a proper advent into the world. After a baby is born, it is visited every other day at first, then twice a week, and finally is sent with its mother to the milk station. Under such a course only 26 babies out of each 1,000 die during their first month on earth, as against 36 where this policy is not followed.

After the milk-station stage on the battlefront of existence, the child moves up past the children's clinic to the public

Photograph by Paul Thompson

NEW YORK SCHOOL BOYS AT A MUNICIPAL PLAYGROUND

The school army of New York is 900,000 strong. Five out of seven of its soldiers were born under alien flags or else have a parent who was. Marching ten to a file, in close formation, the vanguard of the splendid army of future citizens would be coming into New York as the rear guard was passing out of Philadelphia.



Photograph from the New York Edison Company

THE NEW YORK CITY HALL AT NIGHT

New York, with an annual budget of two hundred million dollars, spends more for municipal purposes than Canada spends for dominion purposes in peace times. Yet so great is its wealth that the tax rate is less than two dollars per hundred of assessed value.

school, and here undergoes medical examination at frequent intervals. Adenoids are no longer permitted to retard its growth and mental development, bad tonsils are removed, defective teeth are cared for, and the poor child is given an equal chance with the child of the well-to-do to grow up into a healthy, normal adult, girded with physical well-being and mentally equipped for the warfare of human progress.

The work of food and drug inspection, laboratory research, and other activities might be discussed, but it is enough to say that if "by their fruits shall ye know them," then the New York health service has exhibits to offer which splendidly demonstrate what a municipality can do toward promoting the well-being of its people.

Facing a density of population unequalled anywhere else, dealing with peo-

Photograph by Paul Thompson

THE HUDSON RIVER AND ITS MANHATTAN AND JERSEY SHORE DOCKS

This striking picture, taken from the Woolworth Tower just after a snowstorm, shows ferry-boats and tugs plowing their throbbing way through wastes of snow-covered, broken ice. It is the lower Hudson, or North River, as it is called locally, that carries the bulk of the commerce of the busiest port on the face of the globe.

Photograph by Edwin Levick

A TYPICAL STREET SCENE IN NEW YORK'S LOWER EAST SIDE, BENEATH THE "L" TRACKS

From such a neighborhood as this come many of the new soldiers of America, who are upholding the flag with a spirit worthy of Valley Forge or Yorktown, although in such a block there may be spoken, as mother tongues, as many as twenty-seven foreign languages

Photograph by Paul Thompson

AN ICE-CREAM PARLOR ON WHEELS

With no rent to pay and axle grease in very small quantities required, the ice-cream sandwich man is able to make of his pocket a reservoir for pennies in such quantities that frequently he push-carts his way into the ranks of dairy-lunch owners.

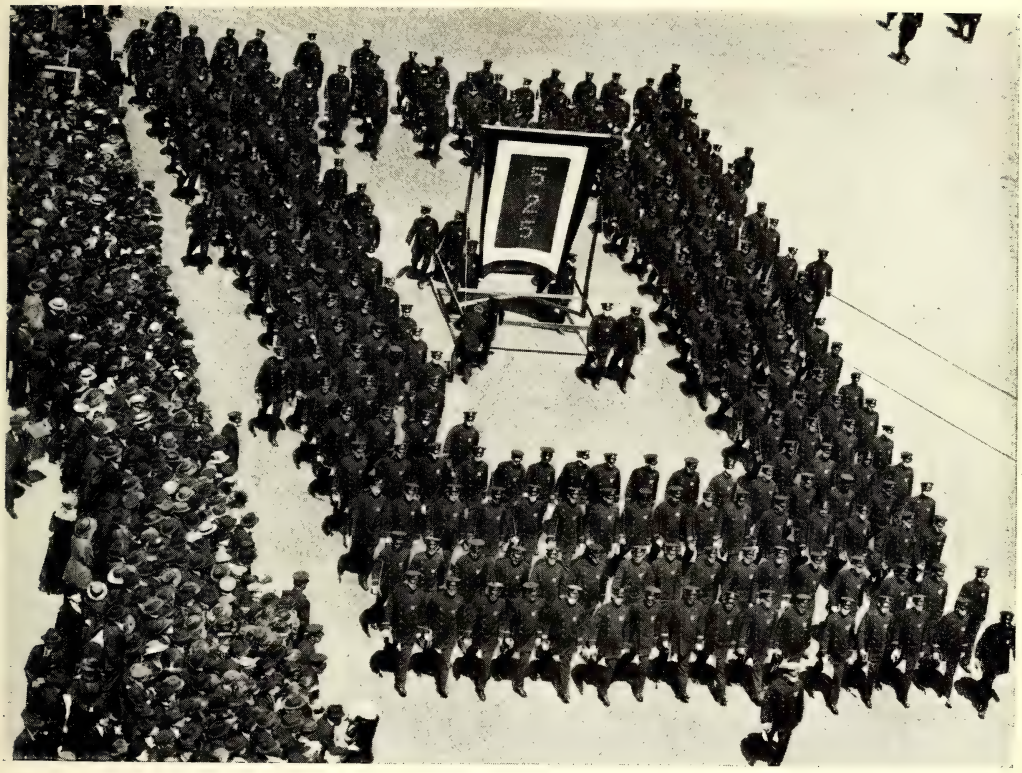
ple who have to be shown at every step of the way, fighting against disease dissemination in crowded factories, crowded cars, crowded streets, New York has triumphed over all its health handicaps.

ALWAYS OUTGROWING ITS UTILITIES

In every phase of its development New York City is like an adolescent boy who is always outgrowing his clothes; the city fathers are kept on tenter hooks to meet its expansion. Its schools are always overcrowded because, rich as it is, the municipality cannot buy sites and build schools fast enough to keep up with the ever-growing child army. Its transportation lines are always choked with passengers because one subway cannot be completed before another is needed. Its bridges and tunnels are always pressed to capacity because the interval between the realization of a new need and the opening of facilities to meet it is long enough in New York's rate of expansion for a succeeding need to be born.

Everywhere one hears the roar of dynamite—the growing pains of a great city. Months there are as years elsewhere and years as decades. The ultramodern of yesterday is the commonplace of tomorrow and the obsolescent of a decade hence; for New York adds a Maine - New Hampshire - Vermont population to its own every ten years, and facilities must ever march at double-quick to keep pace with such growth.

But at last the city has found one place where engineering construction is able to outstrip human expansion and prepare for decades ahead. It has built a water system that will take care of half a century of growth and form a unit in the bigger system that may lie beyond that period.



© Paul Thompson

NEW YORK POLICE DEPARTMENT'S SERVICE FLAG

The police force of the city is ready for any emergency. It is said that fifteen thousand civilians can be called to arms and action in an hour. Every precaution has been taken to insure the maintenance of law and order in the face of any aërial or submarine attack.

THE LONG FIGHT FOR AN AMPLE WATER SUPPLY

For generations Gotham has had a hand-to-mouth water supply, as is the case with other municipal requirements. The gaunt specter of water famine, with all of its attendant train of gnomes—disease, uncleanness, crippled industries, beggared homes—ever lurked in the shadows of the immediate future.

Finally, there arose a man with a vision and with courage. He foresaw all the evils of water famine and never did the great Roman senator repeat his famous dictum "Delenda est Carthago!" more persistently than did Charles N. Chadwick his doctrine that "New York must have an adequate water supply." One by one he won supporters to his idea—now the Manufacturers' Association, now the Merchants' Association, now the Mayor, now the Governor of the State, now the legislature itself.

It was a long fight. City administration prejudices against a non-partisan continuing board had to be overcome, the Governor had to be won over to the idea that patronage must be left entirely out of the question in the expenditure of nearly $200,000,000, and neighboring counties had to be induced to surrender their opposition to the project of an outside city exercising the right of eminent domain within their territory and stripping them of large supplies of water.

ENOUGH WATER TO SLAKE THE THIRST OF THE WORLD

But all these difficulties were overridden, and today there flows down to New York from the Catskills an underground river deep enough and wide enough to carry drinking water for the whole world. In size, in length, in the volume of water it will carry, as well as in the cost of construction and the engineering prob-

Photograph from Paul Thompson

PREPARING THE FOUNDATIONS FOR THE WOOLWORTH BUILDING

So tall is the big skyscraper that its foundations had to be sunk to bed-rock through 115 feet of quicksand. The structure rests on sixty-nine piers of partly reinforced concrete. The "beehive" in the foreground was the "working chamber" where the "sand hogs," or men who excavate sand under air pressure, did their digging.

Photograph from Edwin Levick

THE DAILY THRONG IN NEWSPAPER ROW: THE MANHATTAN END OF BROOKLYN BRIDGE

Brooklyn has a population of nearly two millions, and during the rush hours it seems as if the whole borough wants to cross the Brooklyn Bridge at once. Yet every East River tube and each of the other three highway bridges is doing its best to relieve the crush at City Hall Square.

lems involved, it makes every other aqueduct of ancient and modern times look like a pigmy project. If it were diverted into Fifth avenue, it would be a stream waist deep, flowing at the rate of four miles an hour.

A day's supply would fill a cistern a hundred feet in diameter and nearly two miles deep. Each human being inhabiting the earth could get two and a half pints of water every twenty-four hours from its capacity flow.

Costing for each mile eight or ten times as much as a thoroughly modern double-tracked railroad, to carry a corresponding volume of water thirty great steel pipes four feet in diameter would have been required. Such a pipe-line would have cost twice as much as a tunnel of equal capacity through the eternal bedrock. It has been estimated that, within the city limits alone, fifteen million dollars was saved by the types of construction adopted rather than the use of steel piping, to say nothing of the tremendous cost of renewals which the latter would have entailed.

THE BUILDING OF THE CATSKILL AQUEDUCT

The Catskill system, with all its tremendous capacity, is not expected to bear the whole burden of supplying the metropolis. The Croton Aqueduct, though long since outgrown, is still a sizable waterway itself, for it could supply every inhabitant of the globe with a pint and a half of water a day. As an ally it will be an invaluable aid to the Catskill stream. Between them they will have, when the Schoharie dams are built, an aggregate capacity of eight hundred million gallons a day—half a gallon per capita for the whole world.

Photograph by Paul Thompson

ST. PAUL'S CHURCH AND GRAVEYARD, WITH PARK ROW AND ST. PAUL BUILDING IN THE BACKGROUND

There is every kind of quarter in New York. Here in its very nerve center is St. Paul's Church, oldest religious edifice in the city, where Washington worshipped. A few blocks away is Judea, with its innumerable six and seven story tenements. One square mile of ground in this Bowery-bisected quarter has a population as great as the 113,000 square miles of Arizona's domain.

To build the Catskill Aqueduct, a vast army of workmen had to be assembled. Construction days reminded one of Panama. The men were well cared for; schools, gardens, recreation centers—everything necessary to make them happy and contented—were provided, with the result that there was not a strike from the inception of the work to the day of its completion. Furthermore, the immense task was completed nearly a year ahead of time and for seven million dollars less than cost estimates.

Let us have a look at the big waterway, starting at Ashokan Reservoir and following it down to the end—Silver Lake, Staten Island, 119 miles away.

The first consideration was the geology of the region. In the Devonian Period of Paleozoic times, estimated at some forty million years ago, all interior New York State was under the sea that submerged most of the continent. Gradually the winds and the rains wore down the outcropping heights, and the waters carried the resulting sands away, depositing them on the floor and shore of the sea. Then there came a rising of the land from the sea, and the winds and the rains again began their long, tedious, but tremendous work of earth sculpture.

Glaciers began to plow their way toward the sea, too, like huge jack-planes, and when they passed through the Esopus region they cut a way for the draining of a beautiful preglacial lake. Thereafter Esopus Creek flowed down to the Hudson.

When New York City looked over all available water supplies, Esopus Valley, about eleven miles northwest of Kingston, was thought to rank first, and was selected. A great dam thrown across this valley would impound the waters of Esopus Creek, restore the lake that had been destroyed millions of years before man looked upon the earth, and give New York a great source of potable water.

THE GIGANTIC ASHOKAN RESERVOIR

And so the building of Ashokan Reservoir began. It was to be a body of water 12 miles long, having an average width of a mile and a shore-line 40 miles long. Its average depth was to be 50 feet, with a maximum of 190 feet. It was to hold enough water to cover Manhattan Island 30 feet deep—enough to furnish the whole population of the United States with its drinking water, omitting deductions for evaporation and seepage, for a period of ten years!

To impound all this water there had to be a dam built higher than the one at Gatun on the Panama Canal, with several dikes across saddles or gaps where the lake would have broken through the sides of the valley. But that was not all. Thirty-two cemeteries, containing 2,800 graves, had to be removed, 11 miles of railroad had to be relocated, 64 miles of roads had to be discontinued, and 10 miles of macadam road built.

The big dam is 240 feet high, as compared with 105 feet for the Gatun Dam at Panama. At its base it is 190 feet thick. It is 1,000 feet long and is made of tremendous boulders imbedded in concrete.

When the waters began to rise, it soon became evident that not only had a wonderfully utilitarian reservoir been constructed, but that it was also a superbly beautiful lake, a gem like Como or Maggiore. Landscape gardening has added to the beauties of the natural situation. A ten-thousand acre lake bordered by a five-thousand acre sanitary zone, Ashokan is as much a delight to the eye as its waters are a joy to thirsty millions of men.

But Esopus Creek will never be able to keep Ashokan Reservoir full, for although a single inch of rainfall means 113 tons of water to every acre, Esopus watershed is far too small for New York's water demands. So provision has been made for the damming of Schoharie Creek and the construction of an 18-mile tunnel under a mountain. This creek will cease to flow north into the Mohawk, and will be made to flow south into New York's watermains. Also, a Schoharie Reservoir will be built, big enough to store one-sixth as much water as Ashokan.

THE WATER'S AIR BATH

One of the sights at Ashokan is the aëration plant. A bed as long as a city block and half as wide is covered with water pipes four and five feet apart. At

Photograph from the New York Edison Company

COLUMBUS CIRCLE ON A RAINY NIGHT: NEW YORK CITY

Northward the star of New York's business empire still moves. The financial district is anchored downtown, but "automobile row" has selected as its place in the sun that section of Broadway above and below Columbus Circle, and automobile row has a way of blazing the trail of business into the heart of the residential district of many American cities. Also the gay night throng that once found Times Square the northern boundary of its peregrinations now wanders up Broadway to "The Circle" and Central Park.

intervals of five and six feet in these pipes are nozzles which send up columns of water from forty to sixty feet in the air. Breaking into fine spray, the water descends almost as clean and pure as if it had been raised by evaporation and precipitated again. A fountain three acres in area, surrounded by deciduous and evergreen trees, is a charming sight and forms a rare introduction to this Gotham-made Como.

After receiving its air bath, Ashokan water is ready to begin its long journey to New York. The aqueduct first leads it to Kensico Reservoir, 75 miles away, and on the opposite side of the Hudson.

© Paul Thompson

WOMEN POLICE PARADING DOWN FIFTH AVENUE: NEW YORK CITY

New York's police department faces a tremendous task. The city, because of its great size, the indifference of its citizens to the comings and goings of their neighbors, and the opportunities afforded for having a good time suited to every taste, attracts alike the criminal and those on pleasure bent from everywhere. The war has made a heavy draft on New York's conservators of law and order, but women are proving that they can patrol a beat or collect fares in a street car as well as men. Thus does the economic emancipation of woman receive another boost.

Between these two reservoirs four kinds of construction were used. Over approximately level ground, the cut-and-cover method was used—a great trench was dug and in it was built a horseshoe-shaped conduit of concrete. Where hills interposed, instead of going around them, grade tunnels were built through them.

When valleys, creeks, and rivers came in the way, there were three courses open: great masonry aqueducts like those of ancient Rome could be built; steel pipe-lines could be laid on the floor of the valleys; inverted siphons or pressure tunnels could be dug far below the surface through solid rock.

Photograph from Norman Thomas and W. W. Rock

MADISON SQUARE: THE FLATIRON BUILDING AND FIFTH AVENUE BUILDING

Where once stood the Fifth Avenue Hotel, with its "Amen Corner," now towers a great office structure, the Fifth Avenue Building, and the Hoffman House, where the Democrats of the country used to foregather, is only a memory. Where society once reigned supreme, now there are cloak and suit lofts, and Madison Square is little more than a way station twixt the uptown and downtown business districts.

A lofty masonry aqueduct was open to danger of destruction; pipe-lines were both expensive and liable to leaks; the tunnel was decided upon. In some places these tunnels go very deep, so deep that the water exerts as much as three and a half tons pressure per square foot.

When the aqueduct builders came to the Rondout Creek Valley they met with a discouraging situation. They found a very poor quality of rock under the valley, with many faults. Their drills slipped through into caverns of unknown depths, and at one place they encountered a spring deep in a rock fissure, which had a flow of 2,000 gallons a minute. There was sulphur present, also, and its fumes seriously inconvenienced the workmen. However, enough grout was put into the spring to drive it out of their way; with channel rings and concrete the rock was made strong where Nature had made it weak; and they steered clear of the caves. This tunnel was only 727 feet below grade, and little attention was paid to it by the public.

CARRYING WATER BENEATH THE HUDSON

When the Hudson crossing was reached, where the tunnel goes down so deep that the Woolworth Building placed on top of the United States Capitol and surmounted by the Washington Monument would leave only the capstone of the latter showing above the water surface, New York was gloomy and fearful. Failure of the undertaking was freely predicted. Nevertheless, the construction of the spectacular Hudson tunnel was a far easier task than the unnoticed one at Rondout. The Hudson is tunneled 45 miles below Ashokan Reservoir.

In the building of this under-the-river tunnel, it was first necessary to ascertain exactly the lay of the solid rock below the river. First, an effort was made to drill down to the surface of bed-rock with drills mounted on scows. But that was a failure. Drills were lost and all sorts of hindrances encountered. Then it was determined to dig a shaft at each side, about 300 feet deep, and from these to drill two V's under the Hudson, one with a broad and the other with a sharp angle. In this way the engineers gained the necessary data about the rock formation.

Diamond drills were used. These drills are circular tubes, the lower ends of which are studded with seven black diamonds, costing about $100 each. The drill cuts through the rock like an apple corer through an apple and brings the core to the surface with each stratum in the position in which it was found.

Thus the position of the rock was revealed and its density determined. The engineers ascertained that they could put their tunnel under the river nearly 1,400 feet beneath the surface of the water.

AQUEDUCT BUILDING, ANCIENT AND MODERN

Engineering has progressed in great strides since the days when the Romans were building aqueducts. When the Aqua Claudia was under construction a tunnel under a mountain three miles long was necessary, and the chief engineer started work at both ends. He was captured by brigands, and when he was finally liberated he found that his two digging parties had missed one another entirely and were excavating two tunnels instead of one. When the Hudson tunnel was bored the two parties met and were not half an inch out of the way, although the undertaking required the sinking of two pits 1,114 feet deep, from the bottoms of which the tunnel operations were started.

The Hudson crossing is about half way between West Point and Newburgh, at Storm King Mountain. Thirty miles nearer the city, on the east side of the river, is Kensico Reservoir, with a capacity of thirty-eight billion gallons—22 gallons for every inhabitant of the earth.

This reservoir is four miles long and from one to three miles wide. The water is impounded by a dam thrown across the Bronx River, one of the finest structures of its kind in existence. A third of a mile long, and 307 feet high, it is 235 feet thick at its base and 28 feet thick at its crest. The exposed portion of the down-stream side is made of huge granite blocks.

Above Kensico there is what is known as a coagulation plant. Here provision is made for treating muddy water with a harmless coagulant. In flood periods silt is brought down from the watersheds.

Photograph by Paul Thompson

A PROSPECTIVE GOLD MINE BENEATH BROADWAY

The problem of building new subway lines in New York is a tremendous one. For instance, Broadway, at Canal street, is only ten feet above sealevel, and the excavation had to be carried down forty-seven feet. Great quantities of water were encountered and at one time twenty million gallons a day, enough to supply a city of 150,000 inhabitants, had to be pumped out with great care, so that no sand was carried along. Because of the head of water, large masses of concrete had to be introduced to keep the subway from floating. Where it crosses the Hudson tubes the two systems had to be linked together with a concrete saddle.

The chemical causes the clay to coagulate and settle to the bottom of the reservoir while waiting its turn to pass into the city-bound watermains.

WHERE THE WATER IS "GASSED"

At the outlet of the Kensico Reservoir there is a chlorination plant. Here the Water Department practices the German art of "gassing" on the germ tribe. A very small quantity of this gas will kill many millions of germs. Nowhere else in the world, except on the battlefront, is "gassing" practiced as much as in the battle against the disease germ armies that seek to invade New York via its water supply.

After leaving Kensico Reservoir, the Catskill Aqueduct flows another 17 miles to Hill View Reservoir, used for equalizing day and night consumption of water. This brings the water to the metropolis, where the great 18-mile tunnel through solid rock under the city begins. This tunnel is the longest of its size in the world.

Starting at Hill View Reservoir it is 15 feet in diameter through Harlem and under Harlem River to 135th street. It is within three inches of being as large in diameter as the Hudson Terminal tunnels under North River. It crosses the Harlem between High Bridge and the Polo Grounds and extends through Central Park and Madison Square to a point between Williamsburg and Manhattan bridges, where it dives under East River. On the Manhattan bank of the river there is a shaft in which the Woolworth Building could be buried, so far as depth is concerned.

HEEDLESS OF HUMAN MOLES BLASTING THEIR WAY BENEATH THE CITY

After passing under the river the tunnel rises to the surface in Flatbush, where it connects with the 5-foot-6-inch Brooklyn main. Hence its water runs on to the Narrows, where a three-foot ball-and-socket pipe-line, with joints calked with 300 pounds of lead, was laid in a trench cut in the floor of the inlet. This line carries the water to Staten Island and into Silver Lake Reservoir, 119 miles from the intake at Ashokan.

Here we find how much an unconsidered thing in every-day experience may count in a big project. Take a U-tube and put water into it. The water rises to the same level in both sides. But, although Ashokan and Silver Lake are the two terminals of the figurative Catskill U-tube, their waters by no means reach the same level. The surface of Silver Lake is 362 feet lower than that of Ashokan Reservoir, because of the friction in the big waterway. When it is remembered that a column of water 362 feet high exerts a pressure of more than a thousand tons per square foot, one can appreciate the amount of friction the water encounters in its journey to the city.

Although, on an average, five tons of dynamite were exploded daily during the long period in which the city tunnel was being built, New York might never have known that rock-defying human moles were boring their way through the big town, from the Yonkers line to Flatbush, except for the shafts sunk from the surface at convenient spots.

URBAN TRANSPORTATION

As a completed project, the Catskill Aqueduct stands as one of the wonders of the engineering world. With a length of 119 miles, with a capacity that exceeds the combined flow of all the aqueducts that imperial Rome ever built, with 35 miles of tunnel sunk deep in the primeval rock, the great subterranean stream that brings the life-giving, health-protecting, industry-quickening waters of the mountains to the people at the gateway to the seas represents the indomitable spirit of a municipality that is as virile as it is big, ready to shoulder any burden its unceasing growth imposes upon it.

In no other phase of its complex life has New York felt so acutely the problems that its size and peculiar geographic situation involve as in the matter of urban transportation. With its own population supplemented by the army of commuters living in Jersey, on Long Island, and up the Hudson, twice as many people are transported in a single day within the confines of Greater Gotham as are moved by all the steam railroads of the United States.

Go to Grand Central Station during the rush hours of the morning and after-

Photograph by Paul Thompson

"THE HOUSE OF A THOUSAND WINDOWS": THE EQUITABLE BUILDING, THE LARGEST OFFICE STRUCTURE EVER BUILT

On the average square mile of Manhattan territory there dwells a population nearly equal to that Albany, Des Moines, Fort Worth, or Lynn. To provide elbow room for the business element in a city of such density the skyscraper is a necessity. One of these big buildings demands from fifteen to twenty ten-car subway trains to care for the coming and going of its population. If the big city's office buildings were limited to eight stories they would occupy the major portion of Manhattan.

noon, and you are easily convinced that beyond the Bronx live a million people whose bread-winners work below Harlem River. Go to the Pennsylvania Station at the same time, and you see the wage-earners of tens of thousands of Long Island and Jersey homes coming or going. And at the Hudson Terminal one is ready to conclude that half of Jersey's homes have wage-earners and salaried folk who work in Manhattan and live in Rahway, Orange, Montclair, or somewhere down Jersey way.

A new skyscraper lifts its head toward the blue and straightway 15,000 people find working quarters. Let us load these workers on subway trains and see what it means. A ten-car subway train can carry a thousand people to or from work. It takes fifteen such trains to handle the new skyscraper's tenants. And it takes twenty-six minutes to put fifteen such trains through the necks of the traffic bottle—as at 42d street.

In no other city in the world do as many people live out of walking distance to their work as in New York. Manhattan Island is 13 miles long and only a mile or so wide, and downtown Manhattan is the habitat of the skyscraper and not of the home, except on the East Side. The result is an unbelievable amount of travel. Subway, elevated, and surface cars carry two billion people a year. Every day 30 tons of nickels flow into the coffers of the rapid transit and surface lines. Every year 200 car loads of "jitneys" are harvested from the ride-buying public.

THE NEW YORKER A GREAT RIDER

If New York had only to meet its annual increase in population, that in itself would be a sizable task; for taking care every year of the comings and goings of a new population equal to that of Wyoming were no mean undertaking. But that is only the beginning of the big city's transportation troubles. The people ride more frequently with every extension of facilities.

When New York had only its surface lines to depend on, Mr. Average New Yorker took 147 rides a year. Then came the elevated and he began taking 215 rides a year. When the first subway went into commission, he jumped the annual number of his rides to 298. Now he is using the cars more than ever—is this Mr. Average New Yorker—with some 348 rides a year to his credit. How many rides he will take when all the new subways and elevated lines are completed can only be surmised, but the extensions under way will enable the overhead and underground systems to handle three billion passengers annually without aid from the surface lines.

Crowding her debt limit to the utmost to meet other conditions imposed by her extraordinary growth, New York was financially "up against it" when traffic demands called loudly for new facilities. She was not willing to have new subways built and owned by private enterprise to compete with those already in operation and owned by her, though leased to an operating company; and yet she was not able to finance the extensions without outside help. Meantime, subways that were built to handle 400,000 people a day were approaching the time when they would be called upon to move 1,200,000 every twenty-four hours.

FURTHER EXTENSION OF SUBWAY AND ELEVATED LINES

So the city made a deal with the two rapid-transit companies to "go fifty-fifty" with them in building all subway extensions and to allow the companies to extend the elevated lines.

The result is that instead of one line up Manhattan, on the East Side to 42d street and on the West Side above that street, there will be, when the present project is completed, a line all the way up the East Side and another up the West Side, with branches into the boroughs of Queens, Bronx, and Brooklyn.

And yet, with all the effort that has been made to anticipate the city's traffic needs, every New Yorker feels that there are other needs ahead. Already there is agitation for a through line from downtown to uptown that will make even "rapid transit" a slow phrase. It is believed that the time is not more than a decade distant when it will be imperative to establish an entirely new sort of service—a "high-speed service." This may be given by a line built under one of the

A FUTURE AMERICAN CARRYING HIS OWN BAGGAGE AT ELLIS ISLAND

Out of such plucky raw material as this has New York made itself the metropolis of the New World

HERMES TYPIFYING LABOR: A PART OF THE STATUARY OVER ONE ENTRANCE TO GRAND CENTRAL STATION

Note the comparative size of the artisan standing on the thigh of the figure as he works

Photographs by Paul Thompson

avenues east of Fifth from Bronx to Battery, upon which trains will run which will make only three or four stops between the Harlem River and the financial district.

THE BRIDGES OF MANHATTAN

The "river ring" around Manhattan Island has long forced expansion along abnormal lines, resulting in a shoe-string borough instead of a compact one. The center of the business district is at one end of the borough and not in its heart. But, at last, the city is going to grow like other cities, rivers or no rivers. The Harlem presented no serious obstruction to the plan. Narrow and in a deep valley, it was readily bridged. But East River and North River were different propositions.

It costs millions upon millions to build a big bridge like the Brooklyn, the Williamsburg, the Queensboro, or the Manhattan, but one by one, in the order named, these great structures, towering high enough above the river to avoid interference with navigation, have been thrown across, in order to permit the metropolis to occupy its natural territory on the west end of Long Island.

These bridges have cost the city nearly one hundred million dollars. They have an aggregate length of nearly six miles and are crossed by eight hundred thousand people every day. They could carry that many persons every hour if they were used by the maximum number of elevated, subway, and surface cars which they can accommodate and if each car were loaded to capacity.

SIXTEEN TUBES UNDER THE RIVER TO RELIEVE THE BRIDGES

Although Manhattan Bridge is the world's greatest suspension bridge, and although its neighbor bridges in conjunction with it constitute the greatest aggregation of water-spanning structures in existence, they are wholly unequal to the task of caring for the tide of humanity that ebbs and flows during rush hours between Manhattan and Long Island.

Eight tunnel tubes have been built to share the burden; but in spite of these reinforcements the bridges still carry an increasing number of passengers every year. Eight other tubes are now eating their way through the silt of the river's bottom, and when they are in commission there probably will arise a necessity for as many more.

Bridged over and tunneled under, East River has heard the verdict of the indomitable metropolis, that it can no longer force the city to grow in shoe-string shape.

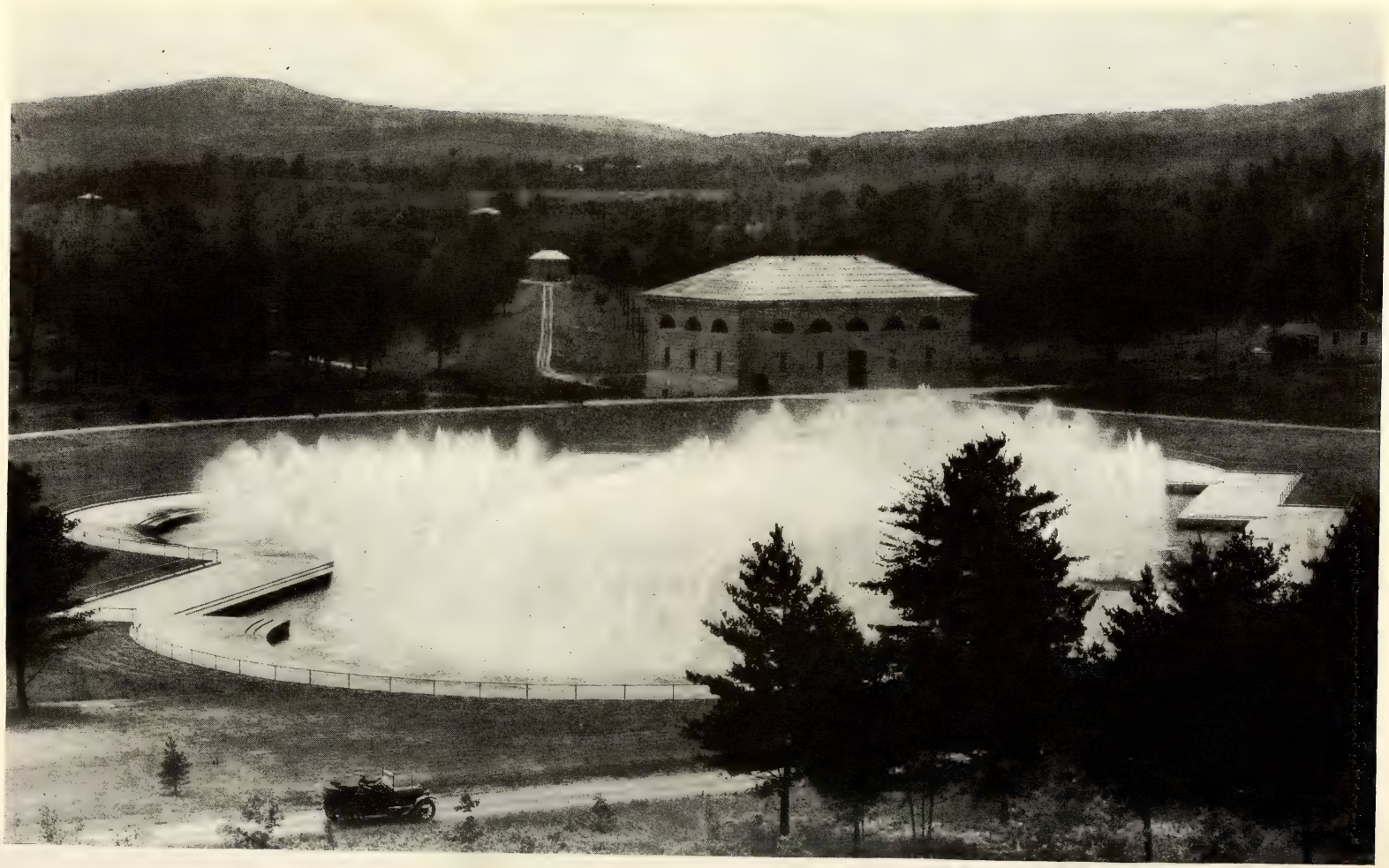
Not less serious than the blockade imposed by East River against the eastward expansion of the city is the lack of north and south streets in Manhattan. With the spread of the motor-car, the city finds the comparatively few-and-far-between avenues that run north and south inadequate. The men who laid out the city made the east and west thoroughfares close together and those north and south far apart, producing oblong blocks instead of squares. Yet so long have the north and south thoroughfares become that a vast amount of travel must be concentrated in a few avenues.

THE AVENUE PROBLEM

Many suggestions have been made for overcoming this congestion. One was to raze a way through Manhattan, driving a new avenue into the great breach. Another was to double-deck one of the avenues, using the second level for light vehicular traffic. Still another proposal is a subway for heavy trucks. It is the hope of the city that the bridge and tunnel conquest of East River will make the day a little more remote when the solution of the problem of providing new facilities for north and south vehicular traffic will become imperative.

The problem of getting across North River is almost as acute as has been that of overcoming the obstacles interposed by East River. Prior to the recent order of the Railway Administration, only one of the many trunk lines that approach New York from the West and South entered the city. All the others discharged their passengers in Jersey-side stations, where water and rail meet.

Up to the time that the present Secretary of the Treasury and Railway Administrator, William G. McAdoo, showed how to cut the Gordian knot of an unbridgeable river by going under it instead of over it, the ferry boat was the



THE AËRATION PLANT AT ASHOKAN RESERVOIR

Photograph from Edwin Levick

This plant was built to give New York's water an air bath before its entrance into the big aqueduct. It consists of a concrete pool as long as a city block and half as wide, covered with water pipes laid in squares four by five feet. At intervals of five and six feet are nozzles through which the water is driven from forty to sixty feet into the air in the form of fine spray. It descends perfectly oxygenated. A fountain three acres in area surrounded by deciduous and evergreen

only line of communication between the west bank of North River and the east bank. Now, however, there are six tubes under the Hudson, two belonging to the Pennsylvania Railroad and four to the Hudson and Manhattan Subway System.

Owing to the growth of the motor-car industry, thousands of trucks and passenger cars are demanding direct communication between Manhattan and New Jersey. To meet this need it is proposed that a vehicular traffic tunnel be constructed under the river, and unless New York breaks all analogies of her history, such a tunnel will be in operation within two decades.

THE WORLD'S LARGEST CANTILEVER BRIDGE

When the Pennsylvania Railroad was halted at Jersey City by North River, its one great ambition was to get into New York. Finally the McAdoo tunnels showed the railroad how, and it not only entered the city, but through it and under East River to Long Island.

Then it conceived a new ambition—to get out of New York and into New England railroad territory. It attained that end by utilizing its Hudson tunnels into New York, its East River tunnels into Long Island, and a new bridge out of Long Island and into the New York-New England mainland. A great cantilever bridge, the largest in the world, swings its graceful way across East River from Long Island to the Bronx mainland, where the long coveted connection with New England railroads is achieved.

Passengers from the South and West to New England thus dive under the Hudson, under the city, under East River, and come up on Long Island. Then they face about and speed over the river under which they passed only a few minutes before.

This Hell Gate structure is one of the most beautiful bridges in the world. Sweeping in a broad, graceful quarter-circle from the Long Island shore, across Ward's and Randall's islands to the mainland, it has a splendid arch that matches its curve and combines with the latter to make the structure one of unusual symmetry. The bridge and its approaches cost $27,000,000. Its arch, the longest in existence, carries a concrete deck on which is laid a four-track railroad.

HOW NEW YORK HANDLES ITS FREIGHT

A congestion of population that at places reaches 3,000 to the acre and at others concentrates as many people as live in the whole State of Nevada within the limits of a single square mile, means not only overtaxed passenger transportation facilities, but overburdened freight movement as well.

Ride from Danbury, Connecticut, to Plymouth, Massachusetts, from New Bedford, Massachusetts, to Bangor, Maine, thence to Burlington, Vermont, and down to Boston. You will naturally conclude that New England is preëminently a manufacturing region. Yet the value of New York's manufactured products is nearly as great as that of the output of all New England's factories.

Well might the freight-handling facilities of any city stagger under such a load, especially a city whose main borough is only a narrow tongue of land with a broad river on each side, a sea at one end, and a small river at the other.

WHAT NEW YORK EATS

It takes a tremendous amount of foodstuffs to supply nearly six million people. Every week the city eats 200 trainloads of food. It must have 2,160 carloads of cereals and flour, 2,000 carloads of milk, 1,636 carloads of vegetables, and 1,168 carloads of meat, dressed and on the hoof. Picture a food train 76 miles long, drawn by 200 engines. That is New York's weekly food supply.

The handling of manufactured goods and foodstuffs is only the beginning of the city's freight-moving problem. Her harbor is the gateway between New England and a major portion of the remainder of the country. Into the "down East" manufacturing district pour raw materials and coal through New York, and out of that district come the finished products. Billions of dollars worth of stuff must be lightered back and forth through Gotham waters.

But these are merely the problems which the movement of domestic freight present to New York. As pointed out in the in-

PENNSYLVANIA STATION: NEW YORK CITY

With its Doric façades designed to suggest Roman temples and baths, and with its grand stairway and its general waiting-room constructed of travertine from Tivoli, Italy, and modeled after the Baths of Caracalla, this station is indeed at once a monument to transportation and to Roman architectural genius. The highest track that runs into the station is nine feet below sealevel. Millions of people pass its portals every month.

troduction, the value of the exports from this port is greater than the value of the exports of Asia, Africa, and Australia combined. Think of the thousands of cargoes which leave these continents. And then add the vast international trade between the countries of Asia, as Japan with Russia and China. Yet all this intercontinental and international trade combined does not amount to as much as the outgoing trade of the port of New York.

The incoming trade, also, is vast in volume—South America, Africa, and Australia combined are far behind New York in the comparison of import values.

With such an unmatched combination of freight-moving demands, what wonder is it that even the supercity falters? Many remedies have been proposed. Ward's Island, planted in the throat of East River, together with Hell Gate, stands as an obstruction to through East River traffic. It has been proposed that great ship terminals be built on the shores of the Bronx above Hell Gate, thus providing entirely new docking territory. Already work in this direction has been started and some extraordinary difficulties have been encountered on the marshy shores, where the mud is so fluid that it has to be moved by hydraulic dredges and deposited behind retaining walls.

Congress has just enacted a law providing for the deepening of Hell Gate channel to 40 feet. This will give the Bronx a splendid water-front of its own.

NEW YORK'S GREAT WATERFRONT

New York has 578 miles of waterfront, of which 450 miles are available for pier construction. The harbor is far superior to that of London or of Liverpool. The Thames is a brook beside the Hudson, and requires constant dredging. Liverpool has a tide of 30 feet range, with enormous watergate construction required to overcome it, while New York Harbor is practically tide free.

In so far as docking space is concerned, New York can expand her harbor to a capacity equaling the combined dockage space of any five of the main ports of Europe.

On the Manhattan shore of North River, between 36th and 39th streets, the city has begun the construction of a series of gigantic piers for modern leviathans. These piers are 1,050 feet long, with slips 350 feet wide and having a depth of 44 feet at mean low water.

Construction preliminaries for these piers reminded the onlooker of the raising of the *Maine* in Havana Harbor. A huge cofferdam, the largest ever made, was constructed by driving steel sheet piling around the space to be excavated. Then the water was pumped out of the area enclosed by the cofferdam and work was begun on the building of the piers.

The relief of the congestion beyond the piers is one of the main problems of the port. A series of elevated freight stations, situated behind these piers and accessible to all railroads, just as are the Bush terminals in Brooklyn, has been proposed.

THE POLICE AND FIRE DEPARTMENTS

One hesitates, in an article of magazine length, even to refer to the police and fire departments of the metropolis, for each is a story in itself and defies successful summary in a few paragraphs.

One who stands at a busy corner like Fifth avenue and Thirty-fourth street, when Upper Manhattan and the Bronx are making their morning migration to the downtown district, and watches a traffic policeman handle the inevitable congestion, appreciates two facts—first, that the New York police force faces tremendous problems, and, second, that it solves these problems in a way that is admirable.

The city spends as much for the maintenance of law and order alone as the republic of Colombia spends for all national purposes. If all the people—men, women, and children—in Nevada's largest city were suddenly to turn policemen, they would make a force just about equal to that of New York.

We read often of the failures of the New York police force, but those who realize the vastness of the population, the unusual proportion of criminals which a supercity attracts from the outside world, and the opportunities men have for losing themselves in a community so big and so busy that no one bothers about the affairs of his neighbors, understand quite

Photograph from the New York Edison Company

THE NIGHT GEOGRAPHY OF NEW YORK'S DOWNTOWN DISTRICT

This owl's-eye view of Manhattan south of Madison Square antedates the air-defense order of the month of June and was not taken on any of last winter's lightless nights. Far away in the remote background is the light-flooded Woolworth Tower, with the dome of the Singer Building as a satellite. In the left background twinkle the lights of Brooklyn Bridge. The broad, curving thoroughfare to the left is Fourth avenue, where it becomes the Bowery. In the distant background in the

well that a police force must be highly efficient to render such an accounting of its stewardship as the New York force is able to give.

The fire department, dealing with a congestion of population such as is to be found nowhere else in the world, protecting the loftiest buildings in the world, guarding some of the most inflammable industries in existence, has a wonderful work to do. Some of the big buildings house as many people during their working hours as reside in North Dakota's largest city; and some of these buildings go down as many stories into the ground as "skyscrapers" rise into the air in many cities.

With the world's busiest waterfront to protect, with industry's most inflammable products to guard from harm, with high buildings and congested tenements to defend against fire disaster, it is little wonder that New York has endeavored to make her fire department the last word in efficiency, with the most modern apparatus, the most thorough discipline, the most unceasing and intensive training for its personnel.

ITS SHOPS AND HOTELS

New York is indeed a many-sided city. It has more facets than a diamond, each fascinatingly interesting, each superlative in its own way. Its amusements, upon which it spends $60,000,000 a year, are a story by themselves. A single theater has had box-office receipts in one season amounting to $1,500,000. The opera has brought in some $10,000,000 in one season, and concerts have added as much more.

Then there are the hotels! Nearly 300,000 people go in and out of the city every day, and a third of them find abiding places in the hotel district. Every night the hotel and restaurant food and drink bill is a million and a quarter dollars. A single hostelry handles more telephone calls a year than the entire kingdom of Bulgaria. The city drinks fourteen million glasses of beer and twelve million glasses of soda water every twenty-four hours and pays $1,300,000 for them. It spends $100,000 a day for ice-cream.

No picture of New York would be even passably complete that did not turn aside from the big problems of a supercity and the story of their solution long enough to tell something about its shopping districts. Perhaps no other metropolis in the world has so many people who are "the glass of fashion and the mould of form," and Gotham has a store for every pocketbook and every taste, from the open-air shops of the East Side, where the hobo can outfit himself in second-hand rags for a song, to the exclusive specialty stores on Fifth avenue, where only those with big bank accounts and expensive tastes are catered to.

Once New York went downtown to shop, but now shops have come uptown to meet New York. One by one, nearly all of the big stores below Thirtieth have gone uptown or out of business, so that of the establishments of merchant princes which formerly graced the region of Fourteenth and Twenty-third streets, only Wanamaker's remains, and even such a name with which to conjure barely suffices to hold the crowd that long has filled that big emporium.

More and more New York is drifting away from the department store and to the specialty shop. Fifth avenue from Thirtieth street to Fifty-ninth is the specialty shopping district. An ideal district it is, too, for here lumbering trucks and evil-smelling meat wagons may not come, and élite New York and the out-of-town shopper can shop and have afternoon tea undisturbed by such traffic.

Rents are high, and so are prices along Fifth avenue, but for all that every store seems to do a prosperous business. One store has nought to offer but lingerie and laces; another specializes in perfumes, and no odor that commerce affords is wanting; still another sells only mourning goods, and yet another toys. Here is a corset shop where only French is spoken, for only the élite are welcome; there a Parisian jewelry store, and a little further on one that handles only leather goods.

Nor must one forget the little specialty places that tuck themselves away on all the blocks touching Fifth avenue on the cross streets, where one may shop at leisure, or the dainty places the initiated find in all sorts of unexpected quarters, even in big office buildings. Some enterprising girl, who has saved a few thousand dollars, unable to pay the big prices

Photograph by Edwin Levick

NEW YORK'S FINAL TRIBUTE TO ITS DISTINGUISHED DEAD

The funeral of Major John Purroy Mitchel, former mayor of the metropolis, who lost his life in an airplane accident at Gerstner Field, Lake Charles, Louisiana. The cortege is passing the Public Library on Fifth

Photograph by Paul Thompson

NEWLY ARRIVED IMMIGRANTS AWAITING OFFICIAL APPROVAL: ELLIS ISLAND

If every American whose father and mother were born in the United States were to leave New York City, it would still be the second largest city of the earth, almost as large as Paris and Berlin together.

for "a place with a front," rents a room in an office building, fills it with all sorts of dainty and tasteful merchandise, and makes her little bid for business. The wise shoppers, who must count the cost, seek her tiny emporium and soon she has a comfortable trade.

THE SHOCK OF NEW YORK'S COMMERCIAL LIFE

The greatest shock Fifth avenue ever had was when Woolworth decided to put a ten-cent store in Fifth avenue near Forty-second, right in the heart of the aristocrats of shopdom. "Oh, no, it will never do," said those who take pride in the avenue's exclusive status. "Because the people who visit Fifth avenue to buy would never think of going into a ten-cent store." Mr. Woolworth was a better analyst of human nature, however, and spent many thousands of dollars in mahogany and walnut, outfitting his store as if he were going to carry the most expensive stock in the city. The result has been all he predicted. Women who do their shopping in imported cars and have chauffeurs and footmen seem to love bargains as well as their sisters, whose only conveyance is a street car and who must wash their own breakfast dishes before joining the buying throng. This store has enjoyed success from its opening hour.

From whatever angle it is viewed, whatever facet throws back the light of its activities to the beholder, New York challenges one's interest and stirs one's imagination. Of all cities, it is the international city. In size, in wealth, in financial operations, in manufacturing, in international trade, in racial makeup, in a hundred ways it is the twentieth century Rome to which all roads lead—a city that does not belong to the New Yorker any more than Washington belongs to the Washingtonian. All nations have contributed to its population, and all America contributes to its financial, industrial, and commercial greatness.

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OVERLOOKING THE CITY OF URFA, AT THE HEAD OF THE PLAINS OF MESOPOTAMIA

The experiences of this city of 45,000 people, the Edessa of the Greeks and the seat of a dynasty of its own before the Christian era, are typical of Turkish misrule. It was in the Armenian Gregorian Cathedral, the largest building in the city, that the Moslems and Kurds, in 1896, massacred more than 1,000 Armenians. The victims were suffocated with smoke from burning carpets and mats soaked in petroleum. The so-called Mosque of Abraham in Urfa marks the traditional birthplace of the Hebrew patriarch.

UNDER THE HEEL OF THE TURK

A Land with a Glorious Past, a Present of Abused Opportunities, and a Future of Golden Possibilities

By William H. Hall

FROM whatever angle one views the Empire of Turkey, he beholds a land of unusual fascination. To the historian, the archeologist, or the geographer it is a storehouse of wealth, worth a lifetime of exploration and study. To the romancer it gives again its thousand and one tales of the Arabian Nights.

Mythology and legend not only come from its past, but are found today on the lips and in the lives of its common people. Poetry and proverb are in the daily speech, while monasteries and mosques proclaim from every mountain top and market-place that religion is a part of the very life of the land.

If one could only turn aside from the horrors of the present, with its black current of misrule, its injustice, its deportations, massacres, and famines, and out of a wonderful past could construct a vision of a more glorious future! For, in spite of four centuries and more of retrogression under the rule of the Turk, there is promise of a golden age for the generation about to come.

THINGS FROM THE PAST

The land of Turkey looks out on the present from a historic past that is the study of all ages. The epics of Homer are concerned with events on the plains of Troy, at the mouth of the Dardanelles. Along the shores of Asia Minor sailed Perseus, and the Argonauts sought the Golden Fleece on the southern coast of the Black Sea.

Crœsus obtained his fabulous wealth by sifting the river sands that brought down grains of gold from the mountains back of Smyrna. Alexander the Great defeated the Persians in northern Syria, and Babylon, on the Euphrates, was the capital that proved his undoing.

Chaldea and Babylonia, richest and most powerful nations of antiquity, were the lower Mesopotamia of today. Their wealth did not consist primarily in tributes levied on subject nations and in plundered temples, but in the riches of the soil of the Tigris and Euphrates Valley. The land of the Nile has always been famed for its marvelous productivity, but its soil is no more fertile and its fields only one-fourth as extensive as those of Mesopotamia.

Wonderful systems of irrigation once watered the plains and made Babylon and its territories the granary and the garden of all the eastern world. When the distinguished engineer, Sir William Wilcox, was called upon to survey this region for present irrigation development, his final report contemplated little more than a rehabilitation of the ancient systems of the Babylonian days.

The power of the city of Antioch reached north and south and east. It was, perhaps, the most beautiful city of Hellenic times and certainly the most luxurious. After the Scipios broke its power in Asia Minor and Rome ruled the world, Antioch became the vice-regent for Rome, ruling over all the eastern world. It was known as "The Gate of the East," through which flowed the Roman conquering legions and from which eastern luxury undermined the foundations of western power. "The waters of the Orontes contaminated the Tiber," as one ancient sage observed.

THE INFLUENCE OF CONSTANTINOPLE ON WORLD EVENTS

On the banks of the Bosphorus Constantine founded his world capital, and from that day to this the Byzantine and Turkish city has figured in all great world

Photograph by Frederick Moore

EXILED

Turkish political and other prisoners being shipped to a penal colony. "The one change that must precede all others before the possibilities of this land and these people can be realized is to rid the country of its present rulers."

movements. It has been the center of intrigues and treaties, of councils and conspiracies, around which have circled the policies of Europe for the last sixteen hundred years.

Within the bounds of Turkey also lay Phœnicia, the synonym for commerce and trade. From the shores of Syria the merchants of Tyre and Sidon sent their fleets of ships, trafficking with all the world. Located in the pathway between Egypt and Babylon, it was the ideal position for trade; while the western world, along the Mediterranean shores, was an ever-growing market for the wares of the east. With the instinct of merchants, the people of Syria made the most of their wonderful geographic position to become the first great shop-keeping nation.

And this land still remains the connecting link between the three continents, and across it should still lie the highways of trade between the east and the west, the north and the south.

Where Turkey joins to Egypt is Palestine. No spot of earth in all the world bears such memories for so many and such a variety of peoples as the rugged mountain slopes, narrow valleys, and half desert wastes of Judea and Galilee. Beersheba, Hebron, Bethlehem, Nazareth, Jerusalem—the mere mention of these names tells the story of Abraham and Moses and David, of the prophets of Israel and of the Son of Man.

THE PRICE OF NEGLECT AND INJUSTICE

Kings and priests and people come from the north and the south, from the east and the west, and "bring the glory of the nations" to do homage to the memories that cluster about these sacred shrines.

What a land, then, is that comprised

Photograph by H. G. Dwight

HAULING FREIGHT FROM THE CUSTOM-HOUSE: CONSTANTINOPLE, TURKEY

within the limits of the Turkish Empire! Out of its past speaks military power and material wealth, literature and art, philosophy and religion. And that land which today lies desolate, with its marvelous natural resources neglected, and its people, who were the glory of the past, repressed by injustice, cruelty, and tyranny — that land possesses today the same elements for material and spiritual greatness that made it the first to develop a modern civilization.

The same broad plains that once fed and clothed a population of 40,000,000 human beings are waiting today for the plow, the seed, and the reaper. The mountains still hold riches of coal and iron and copper. The quarries still have abundance of choice marbles. The rivers are potent with power to turn the wheels of industry. The natural harbors invite the fleets of merchantmen and the river valleys and mountain passes offer natural lines of communication and transportation, as in the days when great caravans passed along these natural highways, bringing the merchandise of the east to the markets of the west.

The whole land has been lying fallow for centuries—a land that modern exploration reveals as one of the richest in natural resources and as unsurpassed by its geographic location for being the trade center of the world.

THE LAND AND ITS PEOPLE

Exclusive of Arabia, which has never been more than nominally under the Ottoman dominion, the Turkish Empire, as at present constituted, embraces about 540,000 square miles of territory. Only about 10,000 square miles of this are in Europe. The Turkish Empire is equivalent to the combined areas of the British Isles, France, and Germany. It is larger than all of the area east of the Mississippi and north of the Ohio and Potomac rivers.

The territory included in our Southern Confederacy is hardly equal to the

CONSTANTINOPLE: ONE OF THE TWO PONTOON BRIDGES ACROSS THE GOLDEN HORN, CONNECTING THE OLD SUBURB OF GALATA WITH STAMBOUL

Founded by the Dorians in 660 B. C. as the colony of Byzantium, Emperor Constantine the Great chose the city as the capital of the new Roman Empire, on the threshold of the East, in 328 A. D. It stood as the easternmost outpost of Christendom for eight centuries until it fell before the Moslem sword of Mohammed the Conqueror in 1453, since which time it has been the Turkish capital. The conspicuous building in

A PUBLIC WELL IN CONSTANTINOPLE

The Near East has adopted the American oil-can as a water receptacle in place of the picturesque jar of pottery, once universally used

AMASIA, ONCE THE CAPITAL OF THE PONTINE KINGDOM

Photograph by George M. Kyprie

The fortress has been used until recently by the Turks, but is now abandoned. Through the city flows the River Yeshil-Irmak, or Iris, which is frequently mentioned by the Greek geographer, Strabo, who was born here. Amasia rose to fame in the time of Alexander the Great. The river is spanned by seven bridges, four of which are from the Ro

Photograph from Janet M. Cummings

AN AMERICAN WARSHIP IN THE HARBOR AND STRUCTURAL STEEL ON THE DOCKS AT BIERUT, SYRIA

Beautifully situated on the south side of St. George's Bay, Beirut is the chief commercial city in Syria, and, since the construction of waterworks in 1875, has been considered the healthiest town on the Syrian coast. It was early the scene of fanatical demonstrations in the world war, Moslem priests urging the killing of "infidels" on the first appearance of hostile fleets. At the beginning of December, 1914, the Turks demanded $20,000 from the American College at Beirut. There were 23 Mohammedan mosques and 23 Mohammedan boys' schools in Beirut, compared with 38 Christian churches and 67 Christian schools at the outbreak of the war.

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HAREMS OF CONSTANTINOPLE

Not many Americans have seen the quaint, narrow streets of the residence section of the Turkish capital. The photograph presents an every-day scene. The street leads from St. Sophia's Mosque to the Bosphorus, and each house shown has its harem. At the bay windows on the fronts of the houses the odalisques stand and gaze into the street at passers-by. The lattices effectually prevent any person on the outside from seeing the inmates. The ever-present American oil-cans in the Near and Far East are to be seen in the right foreground. It is also interesting to note that a touch of appetite makes Turkish youth and Southern darky kin—observe the gusto with which these Mohammedan boys are attacking slices of melon.

present Ottoman Empire, not including Arabia.

The boundaries are the Black Sea and Caucasus on the north, Egypt on the south, the Ægean and Mediterranean seas on the west, and the Syrian Desert and Persia on the east. Turkey in Europe is almost a negligible area, as the Balkan war stripped the Turks of all their European possessions except Constantinople and a narrow territory along the Bosphorus and Dardanelles, some 40 miles in width; so that when the Turkish Empire is now referred to Asiatic Turkey is all that the term embraces except the city of Constantinople and a small amount of adjacent territory.

Roughly speaking, Turkey is divided into five great provinces, or districts—Anatolia, Armenia, Kurdistan, Mesopotamia, and Syria.

Anatolia (the name is from a Turkish word meaning "the dawn") lies between the Black and Mediterranean seas. This district is the home of the greater part of the Turkish population, perhaps 7,000,000 in all. Here is a case where the people can be distinguished from the government. Even the so-called subject races have suffered but little more at the hands of the governing officials than the common Turkish people.

ALL GOVERNMENT IN THE HANDS OF 300 MEN

When one remembers that all government of the Empire lies solely in the hands of a group of not more than 300 men, and that they impose their selfish will on Turk and Christian alike, one readily understands how a distinction can be made between people and government. In spite of a constitution having been proclaimed and a parliament summoned, the people, whether of Turkish or other race, have absolutely no voice in the affairs of the nation.

Armenia, east of Anatolia, extending to the region of the Caucasus and the Persian border, is the site of the ancient Kingdom of Armenia. The population is not wholly Armenian—in fact, even before the war the majority of the people were Turks and Kurds—but here the bulk of the Armenian race was found.

It is a rugged land, a succession of mountains and valleys, where the people have had to contend with nature for the establishment and maintenance of their homes; but, like all highland countries, it has been the means of producing a religious, freedom-loving people.

They were the first nation to embrace Christianity when, in the latter half of the third century, their king, Tiradates, accepted the new faith, and most of the nation followed him. Throughout all the succeeding centuries they have remained steadfast against wave after wave of persecution, until this last storm of hate and fanaticism has swept the greater part from their homes and has destroyed at least a million—two-thirds of the entire people.

THE LAND OF SALADIN, THE KURD

Kurdistan, a hill country north of the Tigris River, is the home of a brave, virile, largely illiterate series of tribes and clans known as the Kurds. They are the descendants of the Cardushi, who gave Xenophon and his ten thousand so much difficulty on their march across these same hills on their way to the sea.

Nominally they are Moslem in religion, but they have retained many elements of heathen worship. Some of their tribes are "Yesdi," or devil worshipers. They are home-loving, frugal, and capable of enduring great hardships. They practice strict monogamy and their women occupy an equal place with their men in the family life.

The Kurds have furnished at least one great man to history, for Saladin, the chivalrous leader of the Saracen hosts, the compeer of Richard Cœur de Lion, was from this people.

Mesopotamia, Upper and Lower, vies with Egypt in claiming the honor of being the home of ancient civilization. It comprises the valleys of the Tigris and Euphrates rivers. Here flourished the Chaldean, Babylonian, and Assyrian empires. The city of Bagdad, with all its glamour of mystery and magic, is in the heart of Mesopotamia.

ONCE THE RICHEST LAND IN THE WORLD

This was the richest land in the world, the granary of the ancients; yet, in spite of all that it has been, it today lies largely

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THE WALLS OF NINEVEH: MESOPOTAMIA, TURKEY IN ASIA

Out of the past of this land, now ruled by the Turk, speaks a glory of military power, material wealth, literature and art, philosophy and religion. Centuries before the Christian era, a regularly appointed librarian had charge of the library of Nineveh's King Ashurbanipal. That institution was open to the public, for Ashurbanipal himself recorded: "I wrote upon the tablets; I placed them in my palace for the instruction of my people."

waste, the desert sands have encroached upon the fertile fields, while the clogged canals have turned other portions into swamps and marshes.

What population there is—not more than one million—is of Arab origin and the Arabic language is spoken throughout. There is, in fact, a very distinct dividing line between the Arabic and the Turkish-speaking portions of the Ottoman Empire. This boundary corresponds with the line of the Bagdad Railway from the Mediterranean to the Persian Gulf. It is for the exploitation of this rich land of Mesopotamia that the famous Bagdad line was built.

Syria, the region extending from the Taurus Mountains to Egypt and from the

desert to "the Great Sea," needs no identification. It is the land of the patriarchs and prophets and apostles—"the Holy Land." Its population numbers about three and a half millions, of Semitic origin, speaking the Arabic language, and yet with so many races intermingled through the centuries of the various conquests and occupations that the people cannot claim any one race as their own. Greek, Roman, and European Crusader have all blended with the ancient Semitic stock to produce the Syrians of today, whom Lord Cromer, in his Memoirs, termed "the cream of the East."

In Syria was the one green spot of Turkey—the Lebanon Mountains. In 1860, because of massacres, the European Powers insisted that these mountains be made autonomous. And since that date this little district has been a living demonstration of what good government will produce and of what the people of the land are capable of becoming.

The steep mountain sides have been terraced to a height of 4,000 feet and planted to olives, figs, and vines. Taxes have been low, safety to person and property secured, good roads built and kept in repair. The people have constructed more comfortable homes and have sent their sons to schools and college.

The story of the achievements of the Lebanon and its sons during these sixty years of autonomy would be a thrilling narrative in itself. Now that autonomy has been taken away, the Lebanon is prostrate in famine.

NATURAL FEATURES

Practically the whole Turkish Empire is of the same surface configuration—high mountain ranges along the sea-coast, with elevated plain and plateau in the interior. These inner plains are generally fertile, being constantly renewed by soil washed from the surrounding mountains. Where rain is sufficient, or where water can be obtained for irrigation, they produce fine crops of grain.

In ancient times the mountains were everywhere covered with forests. The cedars of Lebanon not only furnished timber for the building of Solomon's Temple in Jerusalem, but the kings of Egypt annually floated large rafts of logs from the Syrian coast to supply the demands of the cities of the Nile. This constant demand from foreign lands, together with the lack of any system of reforestation, has practically denuded the mountains of the whole land.

Once more to cover the mountains and hills with pine and cedar and oak would be a simple task if carried on systematically. The chief enemy today of reforestation by nature is the herds of goats, which every spring roam over the whole country and devour every green thing. The little seedling trees suffer especially.

POPULATION OF THE OTTOMAN EMPIRE

The population of the Ottoman Empire, not including Arabia, is about 18,000,000, or was before the war. In giving statistics on any subject regarding Turkey one speaks in approximate terms, for only estimates can be given, as no thorough census is taken or other statistics systematically gathered. Among the various races this total was distributed as follows: Turks, 7,000,000; Syrians and Arabs, 4,500,000; Kurds, 2,000,000; Armenians, 2,000,000; Greeks, 1,500,000; Jews, 500,000; other races, 500,000.

All of these peoples can trace their history back to the period when fable and legend blend with the beginnings of historic facts. And all, except the Turks, have inhabited, from time immemorial, the districts in which they are now found.

These races represent the three great monotheistic religions, which have also originated within the boundaries of the Turkish Empire. About two-thirds of the entire population are Mohammedan, but of different sects. The Christians, also, are divided into many sects, representing nearly all the great divisions of the church.

The Christian races are the most progressive part of the population; they have been most responsive to education and have made some progress in establishing schools of their own. The Turks are the most backward of all; yet under proper encouragement and facilities they are capable of good progress. In competition with Greeks, Armenians, and Syrians, however, they invariably fall behind.

It should be noted that of 48 Grand Viziers who have risen to prominence

Photograph by Mortimer J. Fox

MENDING "AL FRESCO": CONSTANTINOPLE, TURKEY

"Turkey has never been a manufacturing country, but has shipped abroad her raw materials—silk and wool and hides—and has received them back in cloth and shoes. With the water-power of its mountain valleys harnessed, future generations would see their land transformed. But the greatest resource of this country arises from its geographic position. Three arms stretch out in three directions—one to 'the continent of the past,' one to 'the continent of the present,' and a third to 'the continent of the future.'"

Photograph by D. Carruthers

AN ARAB OF THE BENI SAKHR TRIBE

Baron de Larrey, who was Napoleon's surgeon general on the latter's Egyptian and Syrian expedition, has paid this tribute to the Arabs: "Their physical structure is in all respects more perfect than that of Europeans; their organs of sense exquisitely acute, their size above the average of men in general, their figure robust and elegant, their color brown; their intelligence proportionate to their physical perfection and without doubt superior, other things being equal, to that of other nations." This people has recently revolted against Turkish oppression

(see page 66)

Photograph by George M. Kyprie

THE ARMENIAN CITY OF HEREKE, EAST OF AMASIA

Armenia is a succession of mountains and valleys where the people have had to contend with nature in the establishment and the maintenance of their homes. It was the first nation to embrace Christianity.

Photograph by Helen E. Jacoby

NATIVE STREET TYPES IN SMYRNA

With the exception of Damascus, Smyrna is the largest city in Turkish Asia. This, the chief seaport of Anatolia, has a population of more than 200,000, of which fully one-half are Greeks, 60,000 are Turks, 20,000 Jews, 12,000 Armenians, and 15,000 Europeans and Levantines. In November, 1914, diplomatic relations between the United States and Turkey were strained for a time, when a Smyrna shore battery fired on a launch from the U. S. S. *Tennessee,* which had been dispatched to European waters to assist American tourists in returning home. Turkey's explanation was that the shots were fired not with hostile intent, but to warn the launch that the harbor was mined.

within the past four centuries, those whose names would be in history's "Who's Who," only 12 have been Turks; all the others were either of Greek or Armenian origin.

Taking the country as a whole, the percentage of illiteracy is between 80 and 90. The government educational program is very comprehensive, but exists largely on paper. The Turk is able to dream great dreams, but amazingly unable to bring those visions to reality.

THE VARIED RESOURCES

All of the varied resources that contributed to make the nations of antiquity materially great are still available for the future enrichment of the people dwelling in those same lands.

Herodotus, writing of Lower Mesopotamia in the noontide of its prosperity, declared: "It is far the best corn land of all the countries I know. It is so superb that the average yield is two hundred fold, and three hundred fold in the best years. But I will not state the dimensions (of the plants) I have ascertained, because I know that for any one who has not visited Babylonia and witnessed these facts about the crops for himself they would be altogether beyond belief."

In the days of the early Caliphate an inventory showed some 12,500,000 acres of land under cultivation; and Sir William Wilcox in his report, "The Irrigation of Mesopotamia," published in 1911, states that the Tigris-Euphrates delta is an arid region of some 12,500,000 acres, but capable of easy leveling and reclamation. The Arabic name for this region is *Sawâd,* which means the black land.

And northern Mesopotamia is equally rich in possibilities. In ancient days this was a district "so populous and full of riches that Rome and the rulers of Iran fought seven centuries for its possession, till the Arabs conquered it from both," writes A. J. Toynbee.

The same author points out that "in the ninth century A. D. northern Mesopotamia paid Harun-al-Rashid as great a revenue as Egypt, and its cotton commanded the market of the world." It is well known that our word muslin is derived from the name of the city Mosul, in Upper Mesopotamia.

SPLENDID POSSIBILITIES; NEGLECTED RESOURCES

And why should this land not be producing as well as ten centuries ago? The soil and the climate have not changed. The rainfall and the water for irrigation are just as abundant as in the days of old. The people are the same that lived then in the land, equally industrious and thrifty. Why have the past four centuries laid a blight over the fairest corn land of the east?

But it is not Mesopotamia alone that offers agricultural returns in the Empire of Turkey. There are the fertile seacoast plains of ancient Philistia, the uplands of Moab and Ammon, the wheat fields of the Hauran south of Damascus, and the great valley between the Lebanon and Anti-Lebanon, in Syria; the whole elevated plateau of central Asia Minor, with Konia (ancient Iconium) as its center. There are the fertile river valleys and hillsides of Armenia and Kurdistan, together with the famous Cilician plain and the regions about Smyrna and Broussa.

Not only grain of every kind rewards the industry of the peasant, but also fruits of every variety, semi-tropical and temperate, are easily produced. Who has not eaten of the figs of Smyrna and the dates of Bossrah or heard of the grapes of Eschol?

PRIMITIVE METHODS OF AGRICULTURE

The first interest of the Turkish Empire is agricultural. From north to south and from east to west it offers splendid opportunities to the farmer. And these lands in great part lie uncultivated. Reservoirs for the storage of water and other irrigation works that might change desert acres to producing fields are not constructed.

The most primitive modes of cultivation are still in use—the ox-drawn plow of Bible days, the cutting of great fields of grain with the sickle, the threshing-floor, where wheat is trodden out by the hoofs of animals; the slow and painful hand labor, with clumsy instruments, that yields but a minimum of return for the effort expended.

It is all a tale of splendid possibilities, but of neglected and undeveloped resources. Yet it is a promise to the future generation of boundless productivity and of untold wealth in store for progressive industry and a benevolent government.

The marvelous resources of this Empire are not comprised in its agricultural possibilities alone. The story of Crœsus gathering gold from the river sands is not an idle tale. Just this year an American missionary writes: "Grains of gold are frequently found in the gravel left after the torrential floods."

Photograph from Charles K. Moser

SOLDIERS OF THE DESERT

These Arabs are devout Mohammedans, but their country is only nominally under Turkish suzerainty. Not long ago the world awoke one morning to hear that a new nation had been established—the Kingdom of Hejaz. The Grand Sherif of Mecca had revolted against Turkish rule, and with the help of men like these had thrown off the Ottoman yoke.

Of course, no complete and thorough survey has ever been made of the mineral wealth of Turkey. But German maps (and who has studied Asia Minor more thoroughly than the Germans?) mark deposits of coal, copper, iron, silver, gold, and lead, with many of the lesser minerals, such as chrome, emery, manganese, mercury, rock-salt, and sulphur. These are not noted on the map in scarce and isolated localities, but the various deposits occur with such frequency as easily to explain the German zeal for cultivating friendship with Turkey.

The American missionaries resident in the country give unanimous testimony to the mineral deposits. An American professor in one of the colleges writes: "The copper deposits at Arghuni Maaden are wonderfully rich and extensive. The mine now being worked contains 70 per cent of copper, of which about one-half is recovered by the crude method of smelting in use. Ore containing 30 to 50 per cent is thrown away as useless and mountains of such waste surround the mine."

An American doctor states that "the mineral resources of Konia are certainly very great. There are silver mines, lead, and some gold; there are mercury mines a few hours from Konia, while chrome, cinnabar, lead, emery, manganese, and rock-salt are found in the province."

THE MOUNTAINS STILL FULL OF VALUABLE ORE

The president of one of the American colleges in Asia Minor reports: "In this region there are known to be deposits of silver, coal, and copper. I once asked an old Greek up among the mountains about his mining experiences, as we were picking our way together among the slag of some abandoned silver mines. He told me he had spent years under ground. I

asked him whether the mines had closed because the mineral was worked out. 'Whew,' he replied, with an expressive gesture, 'the mountains are full of it.' He did not speak with scientific information, but he had had the experience of a practical miner."

These are a few of the statements made by trained Americans who have spent their lives in the regions of which they write. And all that they tell and more is abundantly substantiated by the reports of the German engineers who have been making extensive surveys for their government.

The question arises, How has it been possible for these riches to have remained undeveloped at the very door of Europe? It does seem impossible, but the true answer is given in this sentence from one of the missionary reports: "There are hopeful indications of various other minerals at other places also; *but the Turks have always discouraged attempts at developments.*"

PETROLEUM DEPOSITS

It is well known that the extensive petroleum deposits along the Persian frontier were a principal cause of England's desire to participate in Persian politics not many years ago, and the possession of these oil fields has been one of the chief objects of military contention between the Turkish and British in their Mesopotamian campaigns.

There are other rich prospects for oil in widely separated parts of the Empire. After careful examination one expert reports: "German engineers have made very thorough surface examinations of this district and had great anticipation for developing large oil fields throughout Mesopotamia. There have been found favorable indications for the development of petroleum areas in several parts of Asia Minor, especially in Syria and Mesopotamia. The indications in Syria are perhaps as promising of rich oil deposits as any in the world."

But here again one comes against that stone wall that has blocked all progress of development, for the report quoted above concludes: "The complete determination of the petroleum supply of Asia Minor must await the return of a stable government, upon whose permanency and good faith capital can rely and which will be capable of establishing law and order throughout the territory in question."

WATER POWER

The Abana, one of the rivers of Damascus, in beautiful cascades, falls from the Anti-Lebanon Mountains to the plain below. A few years ago these waters were gathered into conduits up among the highlands and passed over waterwheels. Now they are not only irrigating the groves of apricots which surround the city, but, doing double duty, are also lighting the great mosque and the city streets and moving electric cars through the oldest city in the world.

What has been done with this mountain stream can be repeated over and over again throughout the land. Turkey possesses an unmeasured power that could be developed from the rivers that rush from the highlands to the sea. Often these streams are great rivers—the Tigris, Euphrates, or Kizl Irmak—flowing through narrow gorges, surging along with mighty force, fed by the eternal snows of Ararat, Taurus, or Lebanon.

Turkey has never been a manufacturing country, but has shipped abroad her raw materials—silk and wool and hides—and has received them back in cloth and shoes. With this water-power harnessed in its mountain valleys the future generation might see their land not only a source of agricultural and mineral products, but also a transformer of these into forms all ready for the markets of the world.

COMMERCIAL ADVANTAGES

But perhaps the greatest resource, after all, of this country arises from its geographic position. Three arms stretch out in three directions—one to "the continent of the past," one to "the continent of the present," and a third to "the continent of the future."

Can there be found anywhere else in the world a position so naturally suited for commanding the world's trade? And in the development of the people who have been nurtured in this land this characteristic of trading ability has been bred.

The Phœnicians sailed to the farthest

seas and made Sidon and Tyre the world centers for commerce. The Greeks, putting out from their islands near by the Asia Minor shore and from Ephesus and other cities of the mainland, were the great carriers and traders of ancient times. We read that King Solomon, taking advantage of his location beween Egypt and Assyria, carried on a great business of mercantile exchange between these empires and became a merchant prince, whose renown spread to the corners of the earth. Following in the footsteps of their ancestors, the people of those lands, the Syrians and Greeks and Armenians, have established a reputation as traders the world over.

The great trunk lines of commerce between the north and the south and the east and the west should pass across this country. In years gone by all the nations of Europe maintained commercial representatives and warehouses in the city of Aleppo. This center was the mart of exchange between Europe and the eastern lands. That position could easily be recovered and surpassed, for the city lies at the natural point of meeting of the great world trade routes.

SPLENDID NATURAL HARBORS

There are natural harbors which with little engineering could become suitable terminals for the land routes. In constructing the Bagdad Railway Germany had obtained a concession to construct a harbor and stores at the city of Alexandretta, near to the place where Alexander defeated Darius, King of Persia. Germany was also to have the privilege of policing this port with her own subjects.

The importance of Beirut, Tripoli, and Smyrna as ports has already been recognized and they are destined to increase. Constantinople is perhaps the finest harbor in the world, and at this point must pass most of the trade between Europe and Asia.

Asia Minor has been and still should be not the bankrupt nation, but the banker nation of three continents.

With each of the topics here presented there has always been an "if" or an "ought to be" or "might become." Turning the pages of history, one reads what this country has been. Reading the daily papers, one knows what the country is. Letting imagination dwell upon the resources provided by nature and the capabilities of the people, one can form a vision of the country's future if only one great change can be brought about.

In 1453 Mohammed the Conqueror surrounded the city of Constantinople and finally caused the downfall of that city, which had stood for eight centuries as the eastern outpost of Christendom. In 1517 the city of Jerusalem and the land of Egypt also fell.

The succeeding 400 years have witnessed the gradual degradation of the land. The cotton and corn fields of Mesopotamia are now deserts and swamps. The mines once worked have been abandoned. The cities, once busy with the trade of the world, are today but bazaars for petty bargains and deceit. The people, with the history of a great past and with capacities second to none, are by injustice and persecution driven from their homes to foreign lands or subjected to a determined plan of extermination by deportation, massacre, and famine.

The one change that must precede all others, therefore, in order to take the first steps toward realizing the possibilities of which this land and these people are capable is to rid the country of its present rulers. It is not merely to "drive the Turk out of Europe," for that has practically been done already, but to deprive him of every vestige of authority. Not only have the Christian races suffered at his hand, but the common Turkish people themselves have suffered almost equal wrongs. Before all bars of judgment, because of his incapacity, his inefficiency, and his atrocities, he has forfeited every right to rule.

THE PARABLE OF THE UNPROFITABLE SERVANT

The parable tells of the servant who, having failed to develop the one talent entrusted to him, had this judgment passed upon him: "From him that hath not shall be taken away even that which he hath. And cast ye the unprofitable servant into outer darkness." And there is no longer one judgment for individuals and another for governments.

This one change having been made and the forfeited talent having been given to a government that has proved its ability, then the dream for these long-oppressed lands can become a reality. But this change should not mean the handing of Turkey over to be divided up into "spheres of influence" to satisfy colonial ambitions, no matter how long cherished, nor the breaking up of the country into a series of petty States, thus repeating the Balkan menace; but it should mean giving this land a good reorganizing government backed by the much-hoped-for League of Nations.

With this good government the country, which has long been an unsanitary plague spot, a constant health menace to Europe, will be cleaned up; adequate schools will be provided; courts of justice will replace those of injustice; proper means of transportation will be constructed; industries will spring up and the resources of mountain and plain will contribute their share to the support of the world.

"Then shall the wilderness blossom as the rose" and "every man shall sit under his own vine and under his own fig tree and none shall make them afraid."

A DAY WITH OUR BOYS IN THE GEOGRAPHIC WARDS

By Carol Corey

Author of "From the Trenches to Versailles" and "Plain Tales from the Trenches"

The splendid work which the members of the National Geographic Society are supporting is described by the author, who reveals the brave and cheerful spirit in which American youths endure their wounds and faithfully records the language in which they express their appreciation of the provisions which have been made for their care and comfort.

THE first time I visited what used to be called the American Ambulance Hospital at Neuilly, just outside of Paris, and what is now American Military Hospital No. 1, I lost a lot of my horror of such places.

It was a glorious afternoon in early spring. On almost every street corner an old woman was selling flowers. There were marguerites and tall, graceful sprays of tiny button-roses, and a perfect wealth of lilacs. I bought a great many of the lilacs, though they were expensive, for I knew that our boys would like them better than most anything else. They're such a homey flower. The scent of lilacs recalls the yard at home and stands for the reawakening of spring and all that that means.

I told my particular old lady that the lilacs were for the American wounded, and she sniffed and said she hadn't heard there WERE any. The taxi driver demanded an extra franc-fifty for what HE called a supplement, though I called it a hold-up.

At the hospital I found less than fifty soldiers—a few slightly wounded, the rest sick only. The warm, sweet breeze was swaying the curtains, and the new leaves on the trees just outside the windows were sparkling after a heavy shower. The nurses were reading or embroidering, and I remember one fellow said it smelled "just like fishin' time." Another assured me that although the Yanks had done nothing as yet, "it wouldn't be long before Fritzie 'd know they were in it."

And it wasn't. A few weeks later I made my second trip to Neuilly. The lilacs had long since disappeared, but I was able to take an armful of sweet peas of every color. I bought out all that one stand held, and when the little apple-cheeked vender asked me why I needed so many I told her. She insisted upon taking two francs off the bill. "I am

Courtesy of the American Red Cross

THE ENTRANCE TO AMERICAN MILITARY HOSPITAL NO. I AND ITS FLEET OF AMBULANCES WHICH BRING THE WOUNDED FROM THE HOSPITAL TRAINS AS THEY ARRIVE FROM THE FRONT

Courtesy of the American Red Cross

ONE OF THE WARDS MAINTAINED BY THE MEMBERS OF THE NATIONAL GEOGRAPHIC SOCIETY

These photographs were taken before the supplies donated by the splendidly patriotic and sympathetic ladies of the National Geographic Society throughout the country were received overseas. The many afghans, quilts, convalescent jackets, pajamas, bath-robes, slippers, handkerchiefs, and other articles have now arrived in France and are adding to the comfort and contentment of America's wounded.

Courtesy of the American Red Cross

A SCENE IN THE CONVALESCENT COURT OF THE AMERICAN MILITARY HOSPITAL AT NEUILLY, PARIS

With its fluttering flags, its brilliant flower-beds, and its gayly awninged shelter porches, this recreation court for America's wounded in Paris resembles the scene of a garden fête. This is the concert hour, music being furnished by a military band.

poor," said she, "but for the American soldiers, would that I could do more!"

The villainous-looking individual in the fiery red vest who drove my taxi said there OUGHT to be a supplement, but inasmuch as I was going to see the saviors of France, the least HE could do was to refuse to take it.

He deposits me in front of the main entrance and I stand at the top of the steps to glance about the courtyard. A dust-covered ambulance is backing in slowly and carefully. The youthful driver jumps down and calls to some one inside the building, "Here's four more fer ye. What'll I do with 'em?"

Whoever is addressed sings back, "Can they walk?" And the answer comes, "I'll say they can't."

Behind this ambulance comes another, and behind that one comes a third, until I count nine all told. I ask the nurse beside me if she thinks I'll be in the way, but she smiles and says, "Why, how absurd! This is only a handful."

A doctor steps up to supervise the unloading. From him I learn that never has the hospital been so crowded as now. It is supposed to care for one thousand, but three hundred extra beds have been added, and "if they keep coming we'll surely have to put them on the roof."

He points out the two great tents hastily erected on the terrace and says that the operating rooms have not been empty for three days and nights. Everybody is dead tired and consequently nervous—that is, everybody but the soldiers. They're the best dead-game sports in the world.

"But come in and see for yourself," he adds.

A CONSTANT PROCESSION OF STRETCHERS

We pick our way through interminable hallways between what seem to be miles

Courtesy of the American Red Cross

DOING HER BIG BIT FOR THE ARMY

A member of the American Home Communication Service, in one of the National Geographic Society Wards, receiving instructions from a wounded soldier about the letter home (see page 79).

of beds. On each is a suffering, bandaged boy. Sometimes it's hard to see the boy for the bandages. Occasionally, when the wound is in the spine, the poor invalid is lying face downward, strapped to a board. Even so, there is always the smile of thanks for the cigarette, the flower, or the magazine.

We pass an endless number of open doors, through which I see many more beds and many more boys. We stand close to the wall to allow a rubber-tired stretcher to be wheeled by. It stops before the operating room, and the one on it, in answer to my encouraging wave, throws me a kiss. There seems to be almost a constant procession of stretchers, for thirteen hundred wounded require countless dressings.

One husky lad in ambulance uniform walks at the head and another at the foot. All day long they lift their comrades, first from their beds to the litter, next onto the operating table, then back again into their beds. This is no easy task.

To do this work a man must be strong and patient and very tender. And he always is all three. He will tell you that he would much prefer to be at the front, but since he has been placed here it is not for him to grumble. He will wipe the perspiration from his dripping forehead and absolutely refuse a box of smokes because he knows they're scarce and are intended for the "blesses." If the man on his stretcher is conscious he waits smilingly until the best-liked brand is selected from my supply. If the newly operated one is still in happy oblivion, he picks out what he thinks will please the sick one, promising to put it on the bedside table.

The soldier on the stretcher and the two at either end disappear around a corner, and three more come, and after them three more. It would all be most sickening if it weren't for the thought that these are the youngsters who stopped the rush on Paris, every one of whom will tell you that he wouldn't give up his experience for a million dollars.

The third floor in this hospital is much

the nicest. It is the sunniest, hence the cheeriest. The two Geographic wards are rather far down to one end, which makes them very quiet. And that, of course, is the best of all. There are twelve beds in each ward, and there is a battered and banged-up American soldier in each bed. It costs $600 a year to keep him there—clean, beautifully cared for, and well nourished. But that sum cannot pay for the flowers on the tables, the phonograph and its records, the oranges in the afternoon, and the all-too-seldom ice-cream treat. Oranges cost ten cents apiece, and as one kid put it, "One ain't hardly worth the trouble o' peelin'." That boy was full of fever.

ANOTHER GEOGRAPHIC WARD FOR THE "TIGER CATS"

I am told that both of these wards are nearly, but not quite, financed for this year, and that there's talk of the Geographic Society opening a third. If that should come to pass, it would mean that twelve more of what the Germans already term the "tiger cats," heroes of Chateau-Thierry, or some other point quite as bloody, would eat and sleep in cleanliness and live or die blessing each member.

"Hello, American!" calls out a musical voice. "Is it true that Washin'ton's gone dry? I gotta reason foh askin', 'cause that's my home town."

"Such being the case," I say, "I wonder if you noticed the sign above this door?"

"I reckon I did," he assures me. "When they rolled me up on the stretcher I kept repeatin' those words to myself: 'Donated by the National Geographic Society of Washin'ton, D. C.,' 'cause I had a feelin' I was goin' to get a shock when they shifted me onto this bed. I kept thinkin' how all the girls in our family had helped in the donatin', and I kept sayin' ovah an' ovah, 'It's a good hunch; you're gonna get well.' An' first thing I knew I was here in bed as pretty as you please. Thanks, lady; that's my fav'rite flower. What is it?"

Through the wide-open windows the bright health-giving sun pours into Geographic Ward No. 1. Here the men are all "on the mend," so that a visitor, especially one bringing something to smoke, is mighty welcome.

FORTITUDE AND FRATERNITY

There is an air of real jollity, for the phonograph is blaring out that once popular melody, "Waiting for the Robert E. Lee," and even the boy in the wheeled chair is beating time with his one foot. When I can make myself heard I ask him if he'd like to have a flower. "Say, on the level," he chuckles, "what'd I do with it?"

I like him for that, just as I like the little pale one flat on his back on the bed in the corner. I can tell that he loves flowers from the way he handles the one I give him. He is very unhappy because some of the "guys" say he bawled all night. Well, if he did, it was because he was in such agony that half the time he didn't know he was doing it. This morning he found he'd chewed his handkerchief to rags, so they needn't say he hadn't TRIED to be quiet.

"That's all right," says a neighbor, "but if I'd a had something to flatten you out with I'd a flattened you out, you bet."

"YOU!" scoffs the pale one. "Maybe you don't know that I know it was YOU who got up outer bed, gave me the drink, and moved my leg three times."

THE BOY WHO DISCOVERED A SPY

"Got any chocolate?" begs one who is able to sit up in bed. He doesn't look more than seventeen, but insists that he'll be nineteen next Tuesday. He's got what he calls three "scratches," and throws back the covers to exhibit a leg bound up like a mummy. I can't help thinking that I'd hate to have "scratches" like his.

"But, gosh! it was worth it," asserts he. "If you'll stay with me a minute I'll tell you about it.

"I was a motor-cycle despatch bearer, so they let me carry a forty-five. I was pumping up a flat tire when I heard my captain talking to a man in French uniform. Now, you see, I know a lot o' German. All of a sudden this bird gets tangled up in his French and begins to fill in with a few Kaiser words.

"'Ha, Ha!' says I to myself; 'so that's the little idea.' I went straight up to him and I says, 'You're a spy, that's what

you are.' Just like that! And he never denied it, but started to beat it.

"The captain stood in the middle of the road, with his mouth wide open, as I started to run after the Dutchy. He could run some, let me tell you. When we got to the first turn there was a big military car painted just like a French one. What do you know about that? A man inside throws open the door, and then I got busy. Bing! BING! says I, and he went down like a lump o' dough.

"The fellow in the car jumped out, hauled him in, and the chauffeur started on high. The live one stood up in the back seat, and out o' three shots he made three hits. Whoopee! THIS is the life!"

HOW THE WAR "GETS" SOME

"Funny how this war 'gets you,'" soliloquizes a soldier young in years, but old in experience. "Why, when I was at home I couldn't watch my father kill a chicken. Now? Huh! Once I was racing along with some o' my pals, when we saw a mess o' squareheads hiding out in a ditch. 'All right,' says I. Take THAT fer the *Lusitania,* and THAT fer the *Tuscania,* and THAT and THAT and THAT fer them Belgium babies! And we threw every grenade we had with us."

The man from the north of Ireland, who hasn't been an American citizen very long, sighs and says, "Sure I like to lie here and think o' the sea." And the one who tells me he was born in Damascus and can speak seven languages compares his children to "bloomin' roses." The red-faced fat boy yawns, "Oh fer a dip at old Coney," and a fourth asks the nurse if it's true that only seven died last night.

"PATCH ME UP QUICK, DOC"

A shoulder, now almost well, is being dressed, and the surgeon's mouth twitches ever so little as he hears, "Patch me up quick, Doc, and get me away from here—I'm needed somewhere else."

The funny little Frenchman who answers to the name of "Blondy" has complete charge of the phonograph. He hardly waits for one record to finish before putting on another. Wondering why he should be here, I am told because he's "got the habit." He's been in the hospital so long that no one has the heart to send him away. Anyhow, he's SUCH a help. "But you ought to see him limp when the major comes around!"

"Only one thing worries me," announces a faint voice from the nearest cot. "The top of my tin hat and the top of my nut sailed away together, and if they don't give me back that helmet I don't care what becomes of me."

"You ought to wear your soovneer 'round your neck, like I do," admonishes another. He boastfully shows us what's left of a button—really only the rim. His tunic was open when Mr. Bullet said, "Howdy!" "Pretty good work," says he. "But not good enough."

From the pocket of what he calls his "kimona" a proud owner pulls out a piece of hard tack. In its center is a big chunk of shrapnel, and my attention is called to the fact that said hard tack is still intact. "And then they expect a TOOTH to crack it," he snorts.

THE GOLD-TOOTH SOUVENIR

"I seem to be the only unlucky one here," comes from an interested listener. He has black, curly hair and is so slight that his body is hardly outlined under the blankets. "When I left old Michigan I told my girl I'd bring her a souvenir that WAS a souvenir. 'None o' your old Dutch helmets for me,' says she. 'I want something o-ri-gi-nal.' 'You'll get it, sis; you'll get it,' says I. So, after I'd croaked my first I started in. He had the handsomest gold tooth YOU ever saw. And BEELEEVE ME! I worked. I pushed and I pulled and I twisted. And JUST when I thought I had it, I'll be doggoned if it didn't drop down the poor boob's neck."

"You unlucky?" demands an indignant bystander. "What do you think of me? First they made me a M. P., and I couldn't sleep nights for worrying about it. But I got out of that all right, all right. How? Well, when it came time to do the arresting, I was hard to catch, that's all. So they dismissed me from the force."

Some one inquires if its true that bread is so scarce in Paris that you can be arrested for feeding crumbs to the birds. Another says whether it's true or not, America's good enough for him. As for France, well, all HE'S got to say about it

Courtesy of the American Red Cross

"THE FINEST SOLDIER IN ANY ARMY"

A "chunk of iron" from bursting shrapnel had buried itself in the flesh so close to his heart that the surgeons said he could not survive ether, so he told them to cut away without the "knock-out drops." "And he never wiggled a toe," testifies the nurse.

is that if the Lord came on earth a second time he'd find this country just like he left it.

"Oh, I don't know," chimes in a third. "Some parts of it ain't so bad. You take Ix the Pains (Aix les Bains), for instance. Some o' my comp'ny went there for 'leave' and they said it's just grand. You're met at the depot with a automobile and taken to the RIGHT hotel. Guv'ment car, of course. At night you put your shoes outside the door and next morning they're POLISHED. And you can have your breakfast in bed if you want it. Oh, la-la, la-la!"

"DOC, I'M YOUR MAN"

The two enormous, open-windowed tents are crowded to capacity, and dotted all about the wide immaculate terrace are men in rolling chairs. Only one is in a bed, and the nurse stops before him because she wants me to meet the boy known to all the hospital as the finest soldier in any army.

"Tell her about yourself," she orders.

"Why, there's nothing to tell," smiles Arthur, "except that I was wounded about a month and a half ago. They kept me in a French hospital until day before yesterday. They told me there was nothin' doin' as far as I was concerned. I said, 'You take me to some one that can talk my talk and then we'll see.' So they brought me here and the doctor looks me over and says the reason why they didn't cut was because the chunk of iron was too close to my heart, and so I couldn't stand to take ether. 'HOWEVER,' says he, 'if you're game

enough to let me do it WITHOUT knock-out drops—.' So I says, 'Doc, I'm your man.'"

"And he never wiggled a toe," chimes in the nurse.

"But," says Arthur, "I didn't care for it much when I heard him saw."

As I step into the corridor to go from Geographic Ward No. 1 to Geographic Ward No. 2, I take a few minutes to jot down some of the things I've promised to bring next time. Here are a few of them: One detailed map of the American front; one small comb and mirror; one jar of jam (strawberry); one cheap volume of Shakespeare (any play); two bars of a certain kind of soap; one good lead pencil and some funny post-cards; one guide book of Paris and one nail file.

But I've got to stop here to make way for at least half a hundred soldiers to pass. They are wearing bath-robes and house slippers and have nothing on their heads.

"THERE'S LONG-WINDED LIZZIE"

"SOME outfit for traveling," roars one. They all know they are leaving, but as to where they are going not one of them has the faintest idea. They'll pile into the waiting motor transports in the yard below, laugh and sing their way across town to a certain station, get on a train, and leave it whenever and wherever they're told to do so; for these are some of the "walking cases," which must be evacuated to make room for the swarms of newcomers who are due tonight. They almost knock me down in their eagerness for cigarettes, but in such a boyish, friendly manner that I can't possibly resent it.

Some of them light up immediately, while others remain to chat for a minute, and still others start whistling down the stairs. But everybody stops dead still when there comes a terrific BOOM!

"There's long-winded Lizzie again," says one. "By ginger! I'd like to lay my hands on the blankety-blank, gosh-dinged, double-dyed son of a sea-cook who does that dirty work. The ———!"

"Help!" I cry; and in my haste to get away from there I almost fall over a jolly big cripple, as he sails along in his "go-cart."

In answer to the usual "What happened to you?" I'm told that he was a gunner, trained to the minute. Only trouble was that he forgot to train his gun—haw, haw! So one fine morning she up and ran over his two feet and crushed them flat. "And that's all there is to that. Honk! honk!"

SERIOUSLY WOUNDED IN GEOGRAPHIC WARD NO. 2

Geographic Ward No. 2 is filled with very seriously wounded.

Entering, I make the regulation speech about having Sweet Caporals, Khedives, and Lucky Strikes; also Bull Durhams to roll. Unfortunately, I hadn't noticed in time that the poor creature just in front of me is trying not to wince as the nurse inserts a drainage tube in his fresh and frightful wound. His arm is off just below the shoulder, but he actually smiles as he says, "You see, I can't very well roll my own."

He seems glad to talk, and, because I can think of nothing more comforting to say, I finish with, "After all, it's your left arm, isn't it?" At that he laughs aloud, for HE had been left-handed.

I put a few blossoms on the second bed, where lies an agonized man whose eye is out. I hear him whisper, "Good God, help me!" I see a rosary around his neck, and on the stand beside him, propped against a medicine bottle, a picture of two little girls. The wobbly, childish inscription reads: "We are praying for our dear papa."

The one in bed No. 3 says the doctor told him he had eighteen wounds, though he himself only counted seventeen. He was just UNDER the shell when it exploded, and so he got most of it. "I guess I'd have done better if I'd have stayed at home—I don't think," smiles he. "Volunteer?" I ask. "I should HOPE I was," says he.

The gasping, breathless one with shrapnel in his lungs doesn't like the smell of hospitals and wonders if I could bring him a bit of perfume. "The kind the fainting ladies use, you know," he grins.

The freckled-faced fighter next in line tells me, with great sparkling eyes, that the hole in his hip is bigger than his two hands and offers to prove it. He is so

Courtesy of the American Red Cross

BOTH GEOGRAPHIC WARDS IN THE NEUILLY HOSPITAL ARE ON THE THIRD FLOOR, WHICH IS THE SUNNIEST, HENCE THE CHEERIEST

"There is a battered and banged-up American soldier in each of the twenty-four Geographic beds. It costs $600 a year to keep him there—clean, beautifully cared for, and well nourished. But that sum cannot pay for the flowers on the tables, the phonograph and its records, the oranges in the afternoon, and the all-too-seldom ice-cream treat."

Courtesy of the American Red Cross

READY TO LEAVE THE HOSPITAL IN ORDER TO MAKE ROOM FOR THE EVER-INCREASING STREAM OF NEW ARRIVALS

They all know tney are leaving, but as to where they are going not one of them has the faintest idea. These are some of the "walking cases" which must be evacuated in order that the more helpless newcomers, due at night, may be accommodated.

much better today that he is to be allowed to read a little. So I promise to bring him some funny papers. "Funny papers nothin'; I want rob-bers and mur-r-ders."

A boy who looks mostly bandages asks me to write to his mother. He's got "shrap" in his thigh, his shoulder, both arms, and his head. He cautions me to write the letter carefully, saying it's his right arm only, so she'll understand why he isn't doing it himself. And the last thing he reminds me is to be sure to put in PLENTY of love.

"Why, of course I can smoke," smiles another, who hasn't any arms at all. "Some one is always coming in to do something for me, and I'm almost never without a fag. Keeps a fellow going, you know. It was the same way on the train coming here. The ones with all the arms did the cigarette rolling, and when we had to change, the ones with all the legs

Courtesy of the American Red Cross

A TRIBUTE TO A SLEEPING HERO

did the walking. Thanks awfully for the posy."

The shadows are lengthening on the wall, as I noiselessly leave this room of sorrow. From a little way down the hall, along with the pleasant clatter of aluminum dishes and knives and forks, comes the unmistakable smell of chicken gravy. The inmates of Geographic Ward No. 1 are already sitting up and taking notice. Soon the wheeled serving table stops before their door, and the funny boy, who, according to his own statement, "tried to stop a shell with his hand," jumps up to help. He wants me to know that there is rice to go with the gravy, and white bread, and new peas, and lettuce, and milk, and mixed stewed fruit.

I notice that boys whose bones are commencing to knit are also beginning to recover their appetites. And I can't help saying, "It COULD be worse, couldn't it, Yanks?"

The busy helper licks a finger and, gesticulating grandly with a dripping spoon, bursts forth like this: "Say, lady, listen: When you haven't seen a razor for so long that your face looks like a barbed-wire entanglement; when you haven't had a drop of water except inside for four days; when you 'get yours' and somebody carries you over thousands of miles of bumps in a road; when the doctor plugs you up and says NEXT; when you're squeezed in a train for two days and two nights; when the ambulance lands you here and you say good-by to your muddy outfit and your underwear that walks; when you're bathed and combed and your teeth are washed; when your fresh, white bandage doesn't show a single drop of blood; when you're put in a bed with sheets and a regular pillow, and the nurse comes round and gives you a pat just for luck and hands you something good to drink out of a cup; when you lie back and stretch out your legs and close your eyes—SAY, fellows! Ain't it a gr-rand-n-glo-ryus feeling? And say—just give a guess as to how we feel toward the members of this here National Geographic Society."

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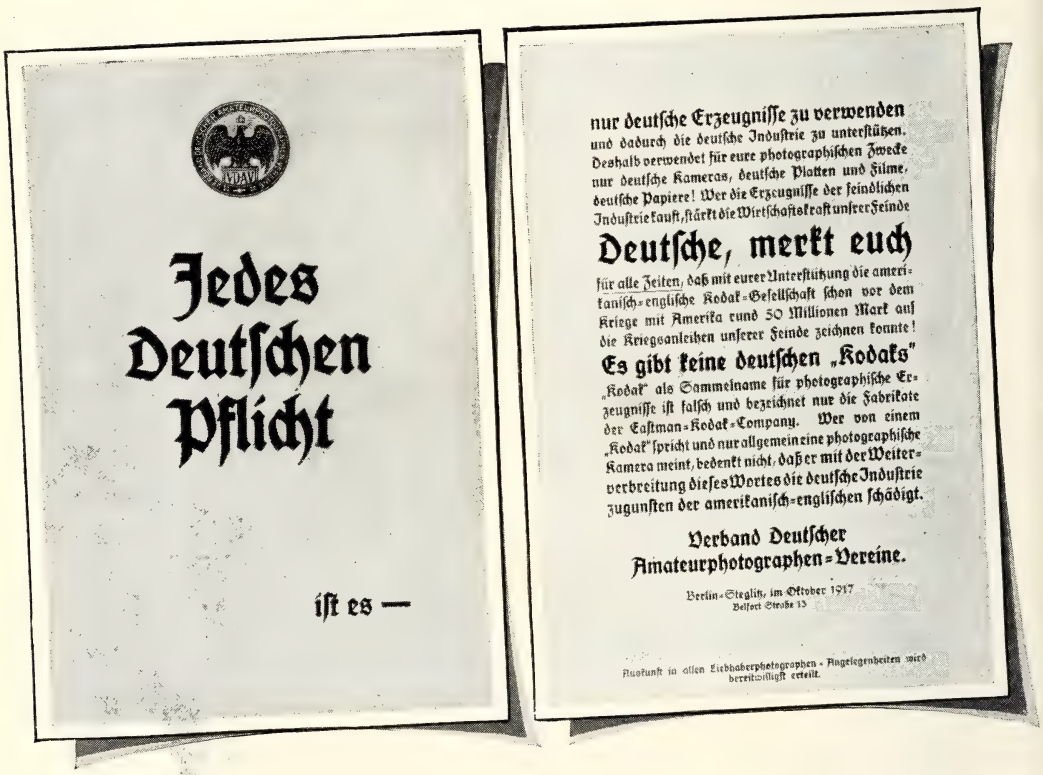

Jedes
Deutschen
Pflicht

ist es —

nur deutsche Erzeugnisse zu verwenden und dadurch die deutsche Industrie zu unterstützen. Deshalb verwendet für eure photographischen Zwecke nur deutsche Kameras, deutsche Platten und Filme, deutsche Papiere! Wer die Erzeugnisse der feindlichen Industrie kauft, stärkt die Wirtschaftskraft unserer Feinde

Deutsche, merkt euch

für alle Zeiten, daß mit eurer Unterstützung die amerikanisch-englische Kodak-Gesellschaft schon vor dem Kriege mit Amerika rund 50 Millionen Mark auf die Kriegsanleihen unserer Feinde zeichnen konnte!

Es gibt keine deutschen „Kodaks"

„Kodak" als Sammelname für photographische Erzeugnisse ist falsch und bezeichnet nur die Fabrikate der Eastman-Kodak-Company. Wer von einem „Kodak" spricht und nur allgemein eine photographische Kamera meint, bedenkt nicht, daß er mit der Weiterverbreitung dieses Wortes die deutsche Industrie zugunsten der amerikanisch-englischen schädigt.

Verband Deutscher Amateurphotographen-Vereine.

Berlin-Steglitz, im Oktober 1917
Belfort Straße 13

Auskunft in allen Liebhaberphotographen-Angelegenheiten wird bereitwilligst erteilt.

The illustration shows a pamphlet signed by the Association of German Amateur Photographers' Societies and dated Berlin, October, 1917. It is reproduced from a photographic copy lately received in this country. The translation in full is given on opposite page.

—*If it isn't an Eastman it isn't a Kodak!*

A translation of the circular in full is as follows:

"It is the duty of every German to use only German products and to patronize thereby German industry. Therefore, use for photographic purposes only German cameras, German Dry Plates and German papers. Whoever purchases the products of enemy industries strengthens the economic power of our enemies.

"Germans! Remember for all times to come that with the aid of your patronage the American-English Kodak Co. subscribed before the war with the United States, the round sum of 50,000,000 marks of war loans of our enemies!

"There are no German 'Kodaks'. ('Kodak' as a collective noun for photographic products is misleading and indicates only the products of the Eastman Kodak Co.) Whoever speaks of a 'Kodak' and means thereby only a photographic camera, does not bear in mind that with the spreading of this word, he does harm to the German industry in favor of the American-English."

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Eastman Kodak Company
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Efficient telephone operation is vital to the war work of this country. The army, the navy and the myriad industries contributing supplies depend on the telephone. It must be ready for instant and universal use. The millions of telephone users are inseparable parts of the Bell System, and all should patriotically contribute to the success of the service.

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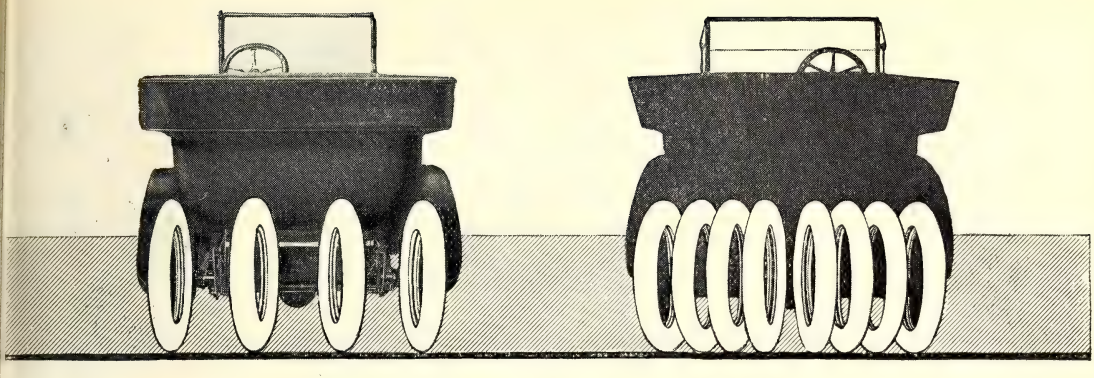

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The above question is of direct interest to you. It makes no difference whether you are concerned about motoring economy for personal reasons, or simply as a principle of national conservation.

The average car (on the right) either heavy, or rigidly-built, or both —to go 10,000 miles, needs an extra set of tires, or eight tires in all.

The Franklin Car (on the left) to go the same distance—and further —needs only the four tires on the car, or half as many as the other.

There could be no clearer illustration of the timely economy of the Franklin Car; nor a more direct indictment of *unnecessary* motor car weight.

For it is excess weight that prevents the average heavy and rigid car from equaling the publicly-known Franklin tire-mileage. The action of the weight of an automobile on the tires is similar to a hammer blow —and the heavier the hammer the harder and more destructive the blow. Heavy weight pounds out tires prematurely. And the heavy car owner, accustomed to paying for tire-mileage he doesn't get, accepts this as a matter of course—until he meets a Franklin owner.

For Franklin owners get a consistent delivery of 10,000 miles or more to the set of tires.

The reason lies in Scientific Light Weight and Flexible Construction. The Franklin weighs 2445 pounds—the right weight for a full-size five passenger car. It also carries the minimum *unsprung* weight—weight *below* the springs, that contributes to the pound and shock tires must meet.

Franklin Flexible Construction—full elliptic springs, instead of the usual compromise type; chassis frame of tough, resilient ash instead of unyielding steel—is still another reason why tires on the Franklin get every opportunity to deliver the full mileage that is in them. This flexible construction reduces road shocks on the tires. There are no torque bars or strut rods to cause the rigidity that leaves tires unprotected.

These are facts of Franklin Construction that affect the whole performance of the car. Because of Scientific Light Weight, because of Flexible Construction, the Franklin is not only economical in tires, but it also gives a day-by-day delivery to its owners of 20 miles to the gallon of gasoline—instead of 10.

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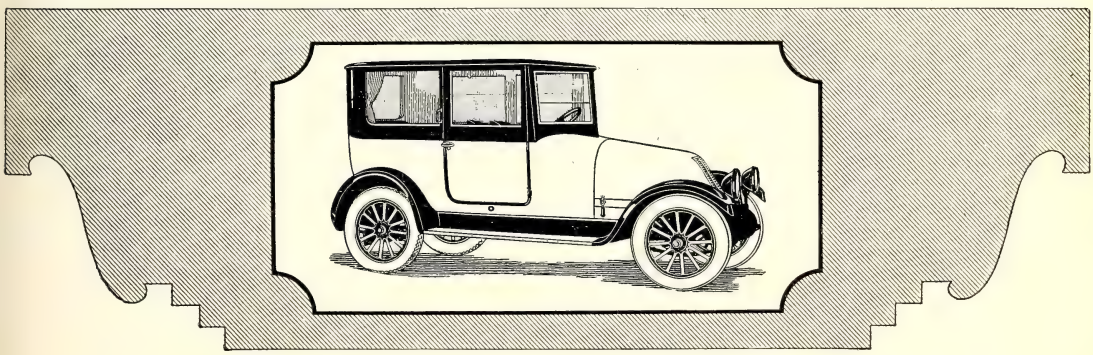

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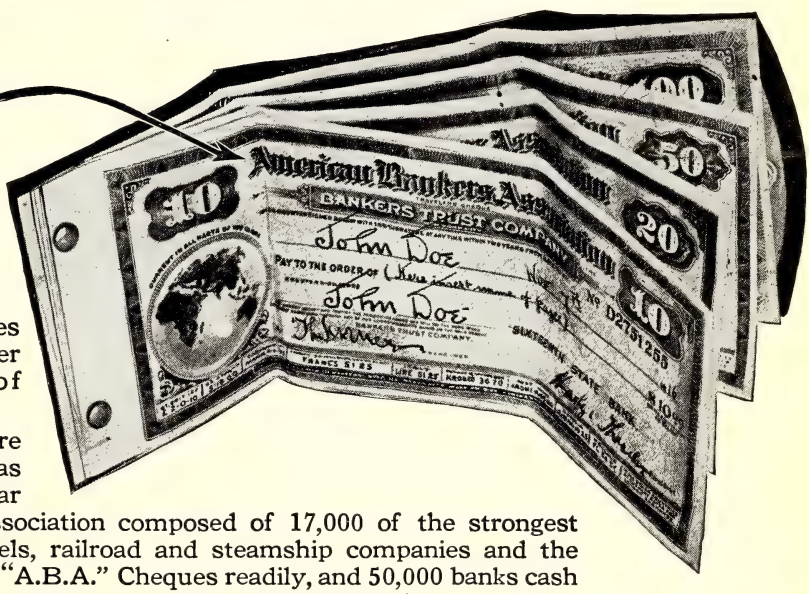

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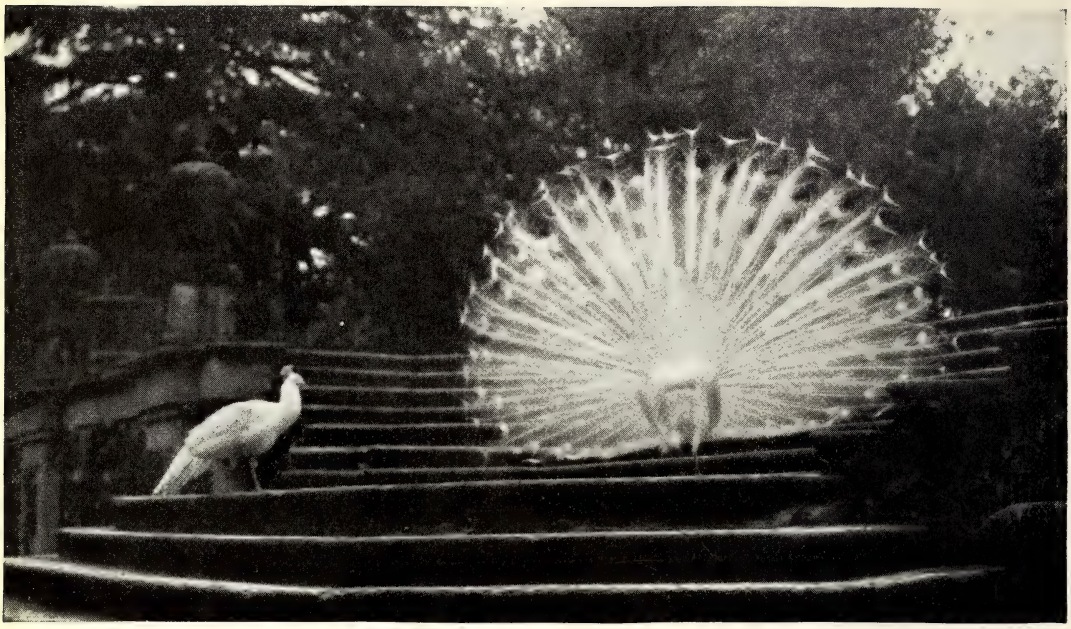

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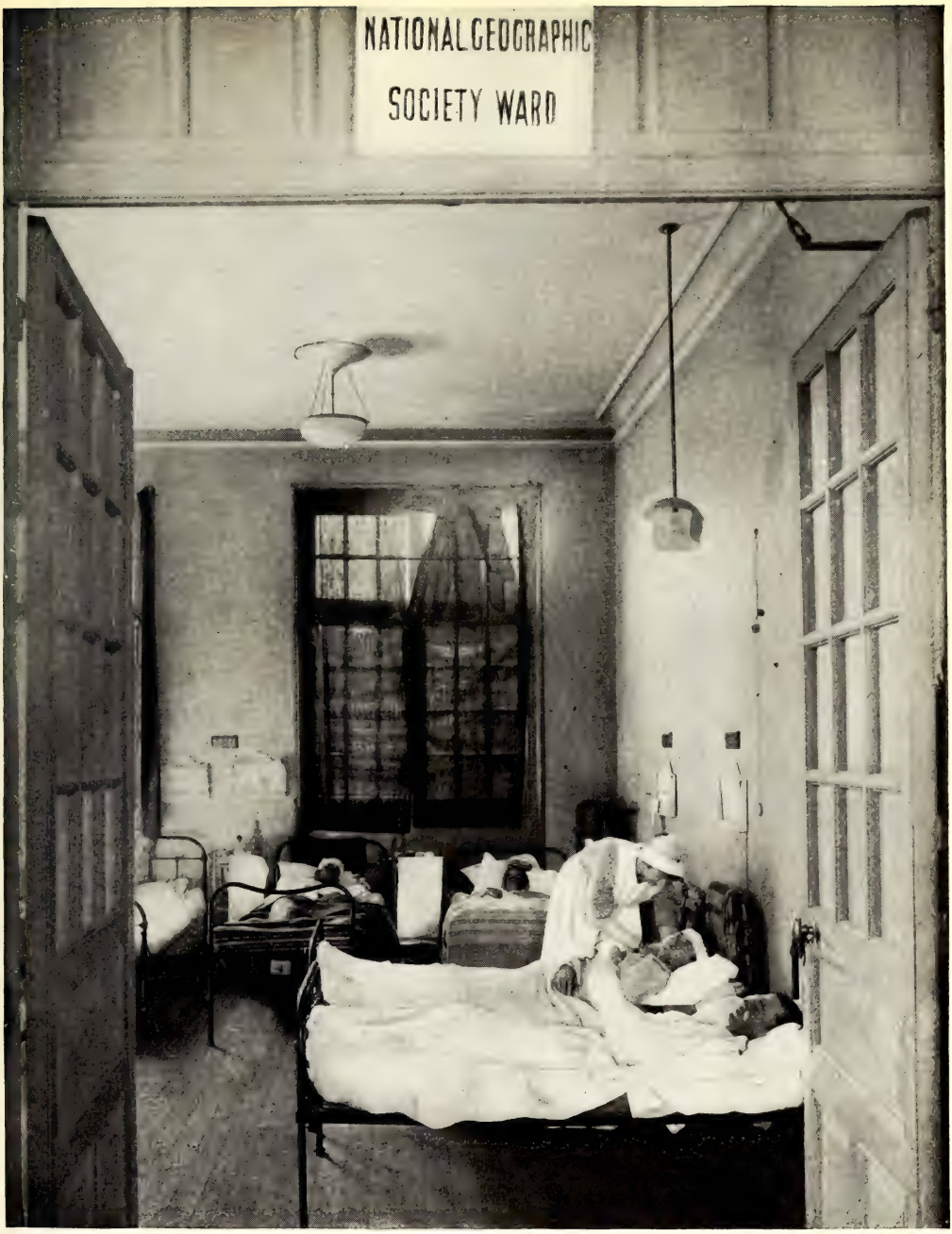

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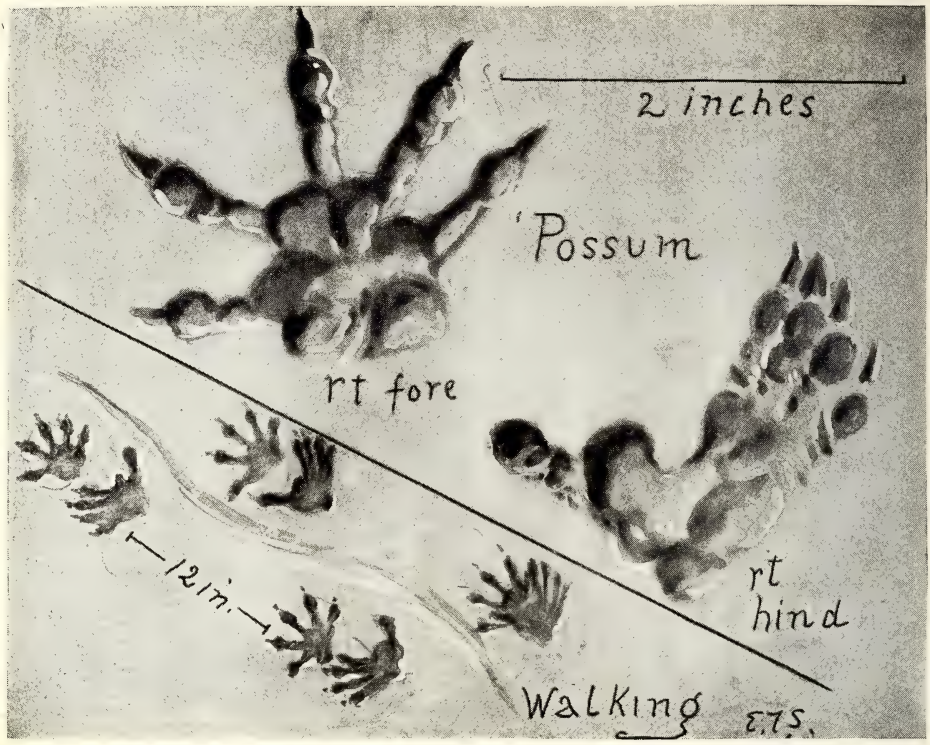

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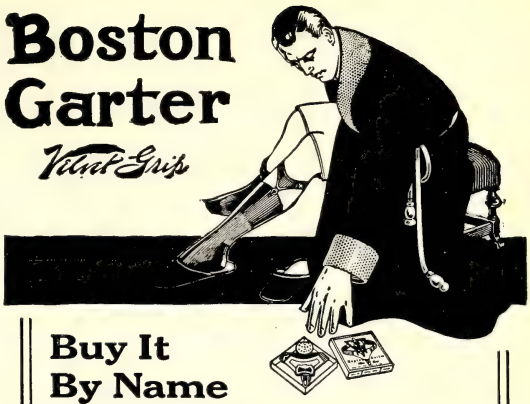

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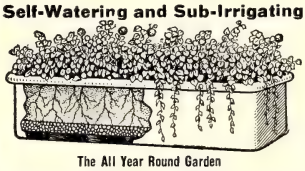

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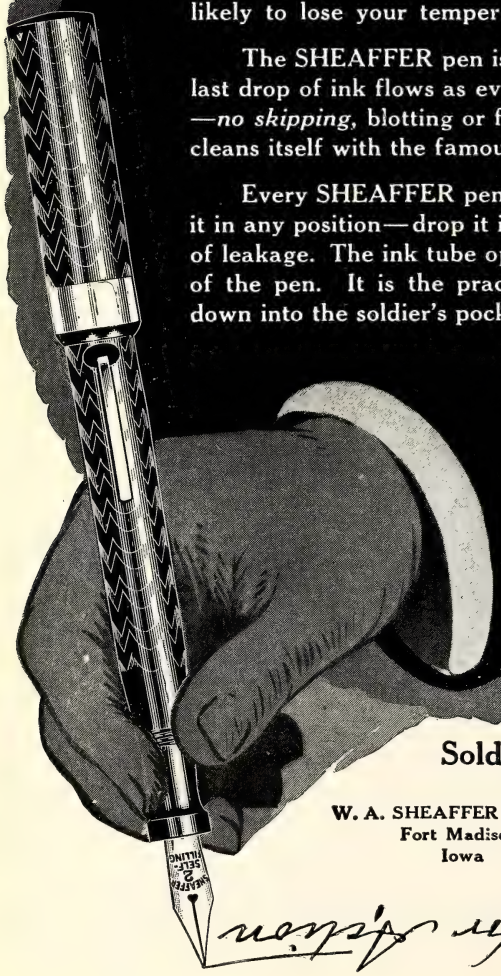

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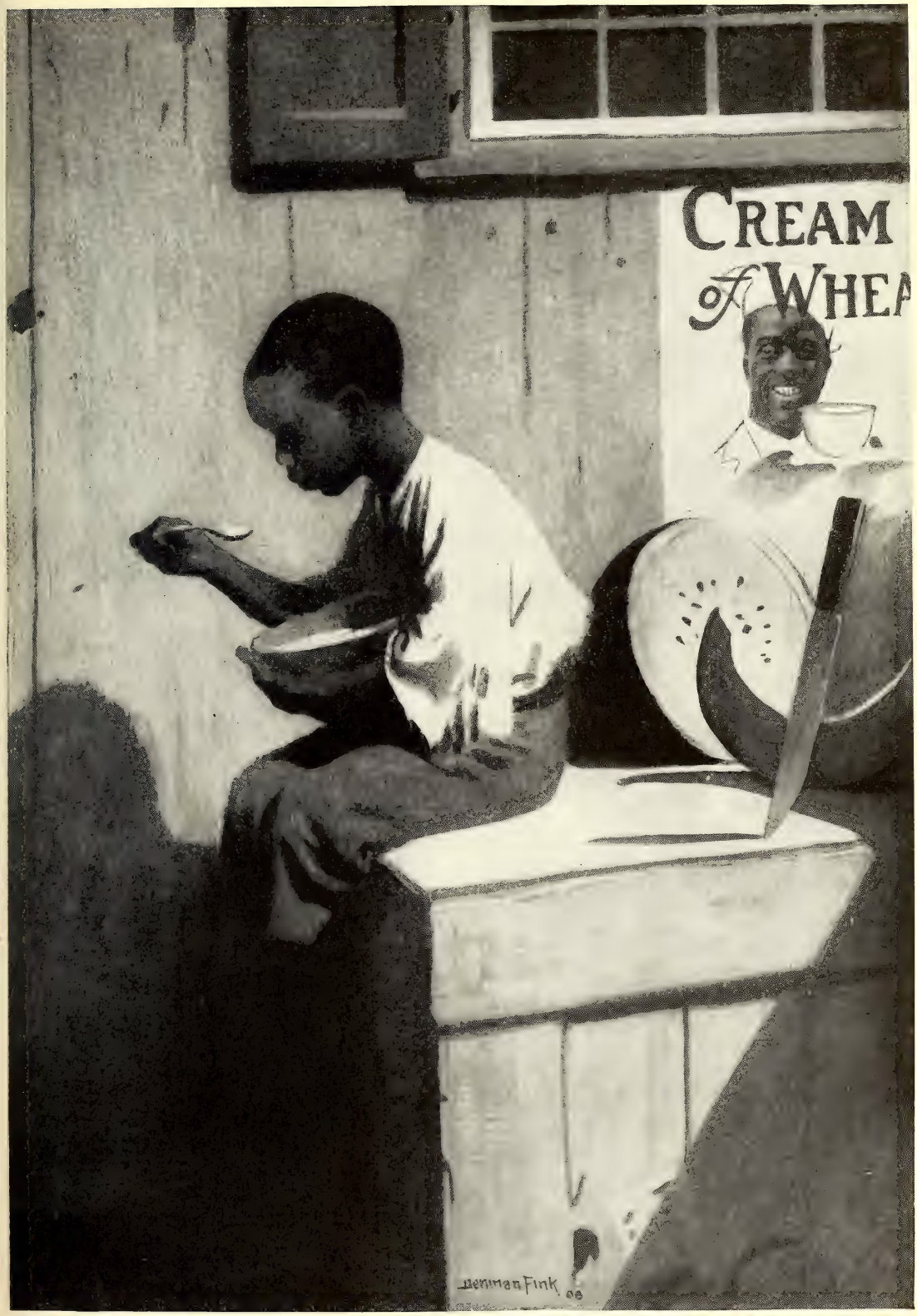

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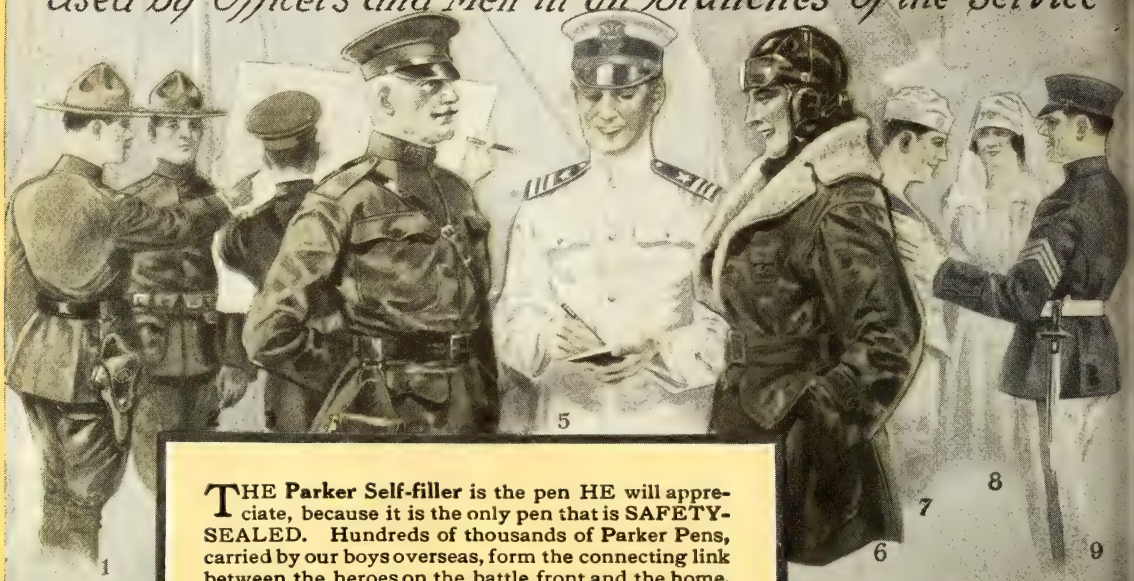

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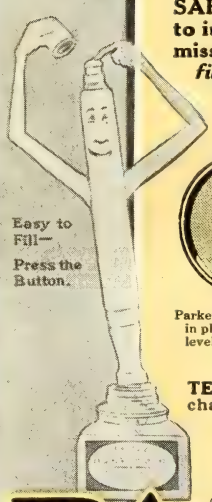

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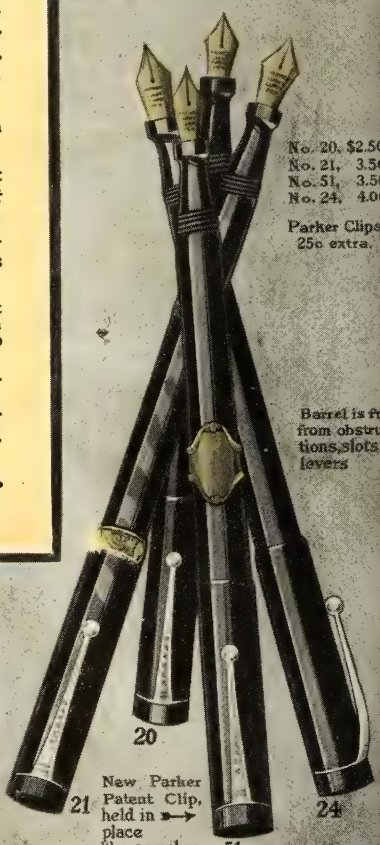

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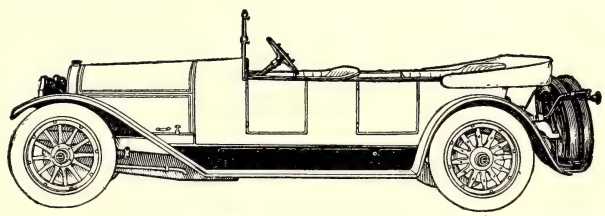
The building of the Locomobile is carried out on a rather restricted basis numerically.

Specializing on quality instead of quantity is an unvarying policy adopted years ago.



THE LOCOMOBILE COMPANY OF AMERICA

Makers of Fine Motor Cars

PRE NVMERO EXCELLENTIA

How I Improved My Memory In One Evening

The Amazing Experience of Victor Jones

"Of *course* I place you! Mr. Addison Sims of Seattle.

"If I remember correctly—and I *do* remember correctly—Mr. Burroughs, the lumberman, introduced me to you at the luncheon of the Seattle Rotary Club three years ago in May. This is a pleasure indeed! I haven't laid eyes on you since that day. How is the grain business? And how did that amalgamation work out?"

The assurance of the speaker—in the crowded corridor of the Hotel McAlpin—compelled me to turn and look at him, though I must say it is not my usual habit to "listen in" even in a hotel lobby.

"He is David M. Roth, the most famous memory expert in the United States," said my friend Kennedy, answering my question before I could get it out. "He will show you a lot more wonderful things than that, before the evening is over."

And he did.

As we went into the banquet room the toastmaster was introducing a long line of guests to Mr. Roth. I got in line and when it came my turn, Mr. Roth asked, "What are your initials, Mr. Jones, and your business connection and telephone number?" Why he asked this I learned later, when he picked out from the crowd the 60 men he had met two hours before and called each by name without a mistake. What is more, he named each man's business and telephone number, for good measure.

I won't tell you all the other amazing things this man did except to tell how he called back, without a minute's hesitation, long lists of numbers, bank clearings, prices, lot numbers, parcel post rates and anything else the guests had given him in rapid order.

* * * * * *

When I met Mr. Roth again—which you may be sure I did the first chance I got—he rather bowled me over by saying, in his quiet, modest way:

"There is nothing miraculous about my remembering anything I want to remember, whether it be names, faces, figures, facts or something I have read in a magazine.

"You can do this just as easily as I do. Anyone with an average mind can learn quickly to do exactly the same things which seem so miraculous when I do them.

"My own memory," continued Mr. Roth, "was originally very faulty. Yes it was—a really *poor* memory. On meeting a man I would lose his name in thirty seconds, while now there are probably 10,000 men and women in the United States, many of whom I have met but once, whose names I can call instantly on meeting them."

"That is all right for you, Mr. Roth," I interrupted, "you have given years to it. But how about me?"

"Mr. Jones," he replied, "I can teach you the secret of a good memory in one evening. This is not a guess, because I have done it with thousands of pupils. In the first of seven simple lessons which I have prepared for home study, I show you the basic principle of my whole system and you will find it—not hard work as you might fear—but just like playing a fascinating game. I will prove it to you."

He didn't have to prove it. His Course did; I got it the very next day from his publishers, the Independent Corporation.

When I tackled the first lesson, I suppose I was the most surprised man in forty-eight states to find that I had learned in about one hour—how to remember a list of one hundred words so that I could call them off forward and back without a single mistake.

That first lesson *stuck*. And so did the other six.

Read this letter from C. Louis Allen, who at 32 years became president of a million dollar corporation, the Pyrene Manufacturing Company of New York, makers of the famous fire extinguisher:

> "Now that the Roth Memory Course is finished, I want to tell you how much I have *enjoyed* the study of this most fascinating subject. Usually these courses involve a great deal of drudgery, but this has been nothing but pure *pleasure* all the way through. I have derived much benefit from taking the course of instruction and feel that I shall continue to strengthen my memory. That is the best part of it. I shall be glad of an opportunity to recommend your work to my friends."

Mr. Allen didn't put it a bit too strong. The Roth Course is priceless! I can absolutely *count* on my memory now. I can call the name of most any man I have met before—and I am getting better all the time. I can remember any figures I wish to remember. Telephone numbers come to mind instantly, once I have filed them by Mr. Roth's easy method. Street addresses are just as easy.

The old fear of forgetting (you know what that is) has vanished. I used to be "scared stiff" on my feet—because I wasn't *sure*. I couldn't remember what I wanted to say.

Now I am sure of myself, and confident and "easy as an old shoe" when I get on my feet at the club, or at a banquet, or in a business meeting, or in any social gathering.

Perhaps the most enjoyable part of it all is that I have become a good conversationalist—and I used to be as silent as a sphinx when I got into a crowd of people who knew things.

Now I can call up like a flash of lightning most any fact I want right at the instant I need it most. I used to think a "hair trigger" memory belonged only to the prodigy and genius. Now I see that every man of us has that kind of a memory if he only knows how to make it work right.

I tell you it is a wonderful thing, after groping around in the dark for so many years to be able to switch the big search-light on your mind and see instantly everything you want to remember.

This Roth Course will do wonders in your office.

Since we took it up you never hear anyone in *our* office say "I guess" or "I think it was about so much" or "I forget that right now" or "I can't remember" or "I must look up his name." Now they are right there with the answer—like a shot.

Have you ever heard of "Multigraph" Smith? Real name H. Q. Smith, Division Manager of the Multigraph Sales Company, Ltd., in Montreal. Here is just a bit from a letter of his that I saw last week:

> "Here is the whole thing in a nutshell: Mr. Roth has a most remarkable Memory Course. It is simple, and easy as falling off a log. Yet with one hour a day of practice anyone—I don't care who he is—can improve his Memory 100% in a week and 1,000% in six months."

My advice to you is don't wait another minute. Send to Independent Corporation for Mr. Roth's amazing course and see what a wonderful memory you have got. Your dividends in *increased earning power* will be enormous.

VICTOR JONES

Send No Money

So confident is the Independent Corporation, the publishers of the Roth Memory Course, that once you have an opportunity to see in your own home how easy it is to double, yes, triple your memory power in a few short hours, that they are willing to send the course on free examination.

Don't send any money. Merely mail the coupon or write a letter and the complete course will be sent, all charges prepaid, at once. If you are not entirely satisfied send it back any time within five days after you receive it and you will owe nothing.

On the other hand, if you are as pleased as are the thousands of other men and women who have used the course send only $5 in full payment. You take no risk and you have everything to gain, so mail the coupon now before this remarkable offer is withdrawn.

FREE EXAMINATION COUPON

Independent Corporation

Division of Business Education,
Dept. 558, 119 West 40th St., New York

Publishers of The Independent, "The Most Satisfactory War Journal in America."

Please send me the Roth Memory Course of seven lessons. I will either remail the course to you within five days after its receipt or send you $5.

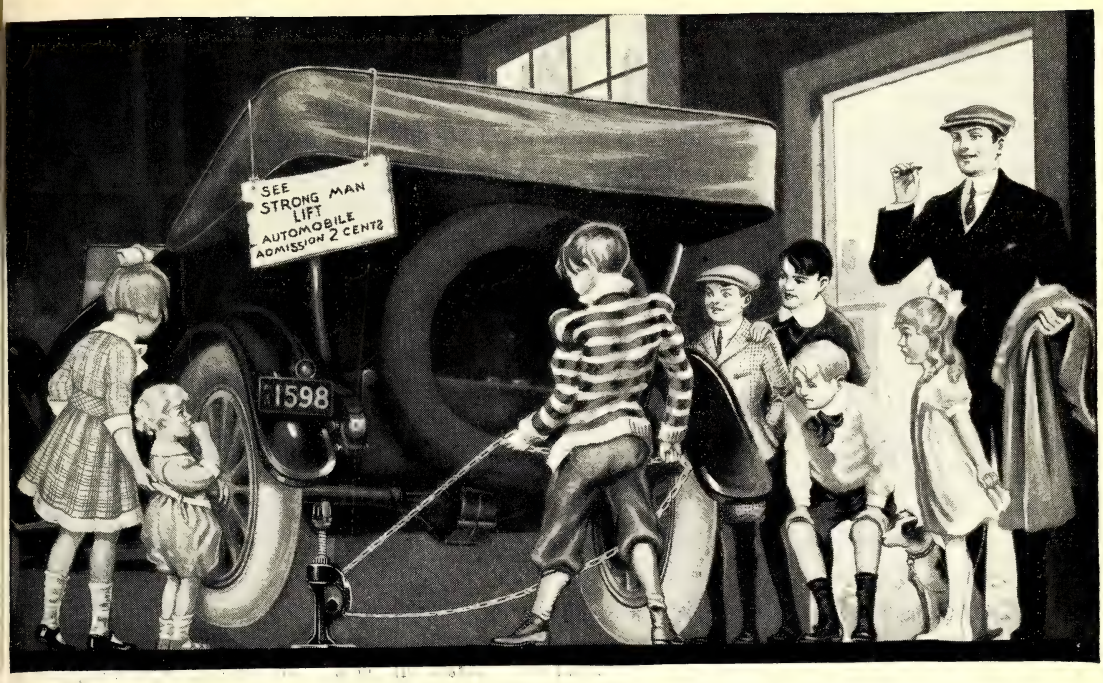
Name.....

Address.....

.....

.....

Nat. Geog. 8-18



It's Child's Play

to raise or lower a car with the

Weed Chain-Jack

To lift a car with the Weed Chain-Jack, simply give a few easy pulls on its endless chain while you stand erect—clear from springs, tire carriers and other projections. ***To lower a car*** pull the chain in opposite direction.

10 Days' Trial

If your dealer does not have them, send $7.50 for any size for passenger cars, or $15.00 for the Truck size, and we will send you one, all charges prepaid. For delivery in Canada send $8.50 for any size for passenger cars or $16.00 for the Truck size. Try it 10 days. If not satisfied, return it to us and we will refund your money.

MADE IN FOUR SIZES

SIZE	Height When Lowered	Height When Raised	Height When Raised With Aux. Step Up	Price
8 inch	8 inches	12 1-2 inches	14 1-2 inches	$7.50
10 inch	10 inches	15 3-8 inches	17 3-8 inches	7.50
12 inch	12 inches	18 1-2 inches	No Aux. Step	7.50
12 in. Truck	12 inches	19 1-4 inches	No Aux. Step	15.00

The 8 inch and 10 inch sizes are made with an auxiliary step as illustrated. When in operative position this step adds two inches to the height of the jack.

The Jack That Saves Your Back

AMERICAN CHAIN COMPANY, Inc.
Bridgeport, Connecticut.
In Canada—DOMINION CHAIN CO., Ltd., Niagara Falls, Ontario.
LARGEST CHAIN MANUFACTURERS IN THE WORLD

Save the *Thoughtless* Dollars

"I got the sweetest hat today. And, my dear, of course, I didn't really need it, but—"

* * * *

"What if it is only a few blocks? Here, taxi!"

* * * *

"I know I'd feel a lot better if I ate less, but I simply must have a big order of—"

* * * *

Over there in the Picardy mud, pock-marked with significant craters and "plum-caked" with unspeakable things that once were men, our soldiers can't hear all that some of us are saying. Good that they can't, isn't it? It wouldn't make it any easier to stand firm against those blood-crazed, grey hordes who come on wave after wave because they believe their Kaiser is "God's anointed shepherd of the German people."

* * * *

It isn't that we Americans are a selfish people. We have simply been thoughtless.

Money is needed to win this war—let's give it. So far, we have been asked only to lend—to lend at a good round 4% interest. Turn your THOUGHTLESS dollars into War Savings Stamps.

NATIONAL WAR SAVINGS COMMITTEE,
WASHINGTON

W.S.S.
WAR SAVINGS STAMPS
ISSUED BY THE
UNITED STATES
GOVERNMENT

Contributed through Division of Advertising *United States Gov't, Comm. on Public Information*

This space contributed for the Winning of the War by

SWIFT & COMPANY, U. S. A.

Not Nut Meats

Those Are Corn Puffs

Think of a grain food so enticing that folks use it as confections.

They do that with Puffed Grains—use them in candy-making—scatter them on ice cream.

And they eat them like peanuts—sometimes doused with a little melted butter.

Bubbled Grain Foods

The latest Puffed Grain comes from corn hearts, steam exploded—puffed to raindrop size.

Sweet pellets of hominy are thus puffed to airy, toasted bubbles.

Corn Puffs are vastly different from Puffed Wheat or Puffed Rice. But they are also shot from guns. Every food cell is exploded. They come to you as flimsy globules, thin and flavory—most delightful morsels.

Let children enjoy them—all day long, at meal-time and between meals.

They are ideal foods, easy to digest; and they taste like fairy tidbits.

Puffed grains are the joy of millions in these summer days.

Food Confections

Buttered or salted, like peanuts or popcorn, Corn Puffs are confections. Eat them dry.

Or, lightly butter and crisp them before adding sugar and cream, and you'll multiply the flavor. (1947)

Corn Puffs **Puffed Rice** **Puffed Wheat**

All Bubble Grains
Each 15c Except in Far West

HERCULES POWDER CO.

Backing The Fighter

Back of our fighting man in France stands the mechanic who labors in our factories and munition plants. Back of the mechanic stands the miner whose broad back bends to his task in the dark heart of some mountain. And back of the miner stands the power of explosives, loosening the grip of Mother Earth on her wealth of metals and minerals.

Without the gigantic force of explosives it would be utterly impossible for us to produce in sufficient quantities the munitions to supply our armies over there; the steel to build our battleships; the coal whose latent energy turns the wheels of our great manufacturing plants; the copper which goes to make our dynamos, cables, and shell casings; the gold which helps us carry the great financial burden of the war.

The Hercules Powder Co. is supplying a very large proportion of the explosives used by American miners, to whose patriotic labor is due, in no small degree, our present vast production of the materials of war.

HERCULES POWDER CO.

Chicago	Joplin	Memphis	San Francisco
Denver	Pittsburg, Kan.	New York	St. Louis
Hazleton, Pa.	Pittsburgh, Pa.	Salt Lake City	Wilmington, Del.

Municipal Bonds
in
War Times

During the war period only such new financing will be permitted as in the judgment of the Government is necessary.

Municipal expenditures are, therefore, not being made except for essential community needs.

This is resulting in a growing scarcity of Municipal Bonds.

Our current list contains offerings of leading cities at attractive prices.

Send for list N-8 of issues yielding from 4½% to 6% and exempt from all Federal Income Taxes.

William R. Compton Co.

Government and Municipal Bonds
"Over a Quarter Century in This Business"

NEW YORK
14 Wall Street

ST. LOUIS
408 Olive Street

CHICAGO
105 So. La Salle Street

CINCINNATI
305 Union Trust Bldg.

PITTSBURGH: Farmers Bank Building
JACKSON, Mississippi

THE NATIONAL CITY COMPANY
NATIONAL CITY BANK BUILDING
NEW YORK

Analysis of Liberty Bond Issues

WE HAVE prepared for the use of investors a concise comparison of the several issues of Liberty Bonds.

The table shows the yields and essential details of the six issues outstanding.

A copy will be sent upon request for AN-86.

The National City Company

National City Bank Building, New York

Correspondent Offices in 31 Cities

Bonds ***Short Term Notes*** ***Acceptances***

War-Tested 6% Investments

THE first mortgage 6% serial bonds, safeguarded under the *Straus Plan* have stood the test of four years of the world war as they stood the test of unsettled conditions in other years. They have again proved their already proven soundness.

We are now offering a well-diversified list of well secured bonds to net 6%, in $100, $500 and $1,000 denominations, maturing in two to ten years.

Write for our current offerings, and our booklet, "Safety and 6%". Ask for

Circular No. H-808

S. W. STRAUS & CO.

Established 1882 — Incorporated

NEW YORK
150 Broadway

CHICAGO
Straus Building

Detroit — Minneapolis — San Francisco
Philadelphia — Kansas City

36 years without loss to any investor

ESTABLISHED 1865

$80 Return In One Year from Investment of $980

Security is developed water power and newspaper manufacturing plant of large worth and established earnings.

We have available for August funds this and other safe, profitable investments of varying maturities and yielding 6% to 8¼ %.

All are secured by industries vitally essential to our national welfare. Present market conditions permit such exceptional offerings.

Bonds of $500 and $1,000 denominations.

Write for Circular No. 1010-D

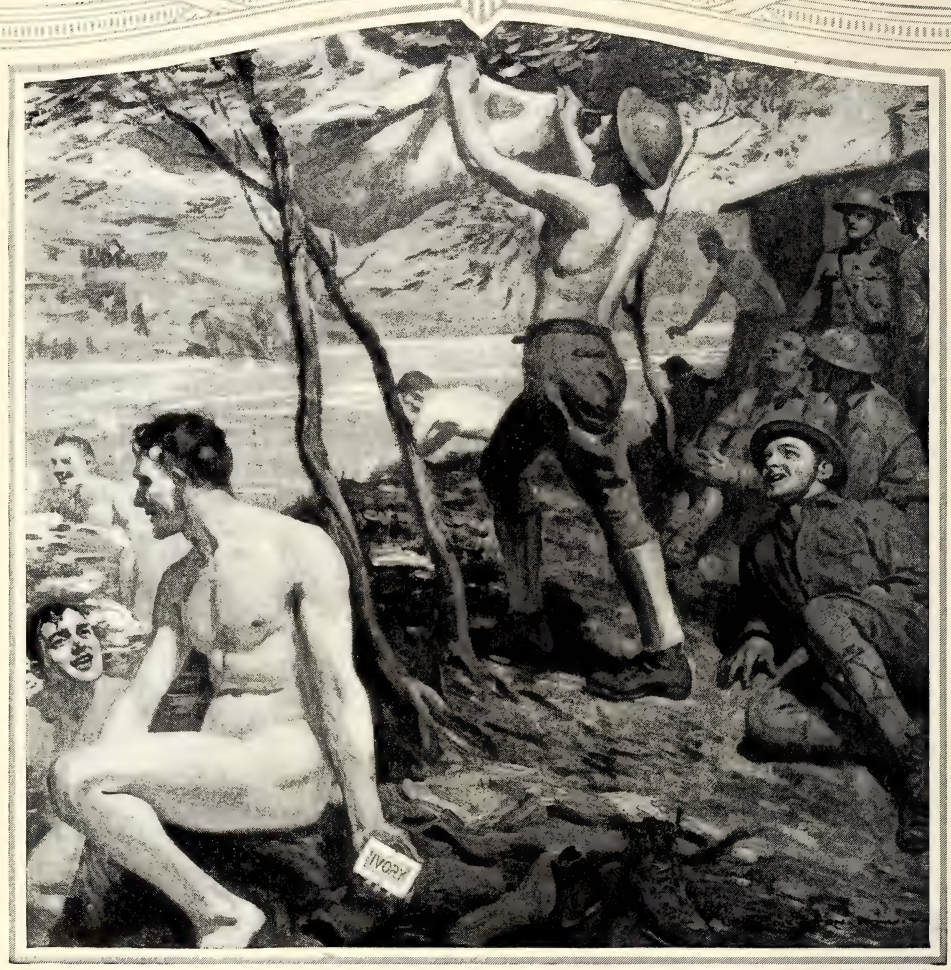
Peabody, Houghteling & Co.

(ESTABLISHED 1865)

10 South La Salle Street, Chicago

(B-I92)

ESTABLISHED 1865



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IVORY SOAP follows the flag. Wherever America goes, it is "among those present." Ivory's use is as unchangeable a part of American life as the practice of cleanliness. Ivory Soap is, in fact, the very joy of living to Our Boys when they are relieved from the front lines for rest, recreation, clean clothes and a bath.

IVORY SOAP.

. 99 44/100 % PURE

VOL. XXXIV, No. 2 WASHINGTON AUGUST, 1918

THE NATIONAL GEOGRAPHIC MAGAZINE

BRINGING THE WORLD TO OUR FOREIGN-LANGUAGE SOLDIERS

How a Military Training Camp is Solving a Seemingly Unsurmountable Problem by Using the Geographic

BY CHRISTINA KRYSTO *

THIS is a story of adventure. We know that this is so, because when the word adventure came up in class for definition some days ago the mild-eyed Norwegian on the end of the bench said, thoughtfully, in his uncertain English, "Adventure is something new and we like it."

Teaching English to the foreign soldiers here in Camp Kearny, California, is new and we like it. We like it even when we have to write our spelling words on planks because there are no blackboards; we like it even when a major and a captain together come to visit our classes just as we are calling on our dullest pupil; we do not lose faith even when those classes are taken from us in a body and put on dire "K. P.," and we are left, with a beautifully prepared lesson and sometimes a whole piece of chalk, pilfered somewhere, to stare at empty benches.

* Miss Krysto, a member of the staff of the Bureau of Immigrant Education, of the State Commission of Immigration and Housing, of California, was designated by this organization to assist the United States Government in the education of foreign-language soldiers at Camp Kearny. In the following article she tells how this work was pursued.

To be sure, we were properly launched in the work. Other camps might boast of a better school organization, of a better teaching force—might easily boast of better equipment. But to Camp Kearny belongs the distinction of having had the shortest, most comprehensive, and—taking into account its aim and purpose—the most successful normal course in the teaching of English to foreigners which has ever been given in any camp or—we think we are safe in asserting it—anywhere else in America.

A SIX-WEEKS' COURSE IN THREE DAYS

Camp Kearny detailed its teachers to teach even as it detailed its pupils to learn; and then, through the efforts of the Commission of Immigration and Housing of California, the only woman who — to quote herself — was "mad enough to try the thing" came down to camp and, with just three days at her disposal, gave her six-weeks' normal course.

It was an attempt which was destined from the start to fail and which succeeded, as such things sometimes succeed when one is "mad" enough to try them.

The Superintendent of Immigrant Edu-

cation in Los Angeles, Miss Ruby Baughman, may forget many things among the thousands with which she must charge her mind, yet she will never forget the roomful of sergeants, corporals, and privates, detailed to teach, who sat through her lectures four hours of each day for three days, and every day at the end of the four hours had to be ordered from the room because they would not leave voluntarily!

In their turn those sergeants, corporals, and privates will not forget the clear-featured, clear-eyed woman who talked to them through all those hours and laid before them, in all its hopeless intricacies and with all its unending heartaches, the entire foreign problem of the American Army.

No one knew how she did it; perhaps she herself did not quite know. She talked of school-rooms and lessons and methods of approach. She taught, somehow, the story of the foreigner. Men who would have left the room had she tried by a word to convert them stayed and were won over to her faith.

THE MISSION OF THE KHAKI-CLAD TEACHERS

Normal course—always the words will mean just this to us: a low-ceilinged, stuffy room, with the merciless glare from the hot world beating against the windows, the ceaseless droning of a graphophone in the adjoining hall, the continuous rumble of heavy wagons on the paved road just outside the door, the strangely mournful clatter of cavalry trotting past. And, above it all, a great truth being told, the truth of silent suffering or, worse still, the apathy which follows upon suffering on the part of those who have ears and cannot hear, who have tongues and yet are dumb, who understand neither the commands of their officers nor the chatter of their mess companions, who do not know why they are, where they are, and what it is all about.

Between these men of foreign tongue—the silent, discouraged horde—and enlightenment stands that roomful of khaki-clad men—sergeants, corporals, and privates detailed to teach.

Something very fine rose and grew in that room in those three days—something which found expression two weeks later in the glowing plans of two of the teachers who had been ordered to France. Eager to go, triumphant, they still found time to plan—not any glory for themselves, not any heroic deeds, but a school "over there" for the non-English-speaking soldiers who might be within their reach when they were "settled" overseas. To hope that their plans will find substance is, perhaps, to put an impossible strain upon the nature of soldiers of 19 and 20, and yet we are awaiting with impatience our first letters from France.

PROBLEMS OF QUARTERS AND HOURS

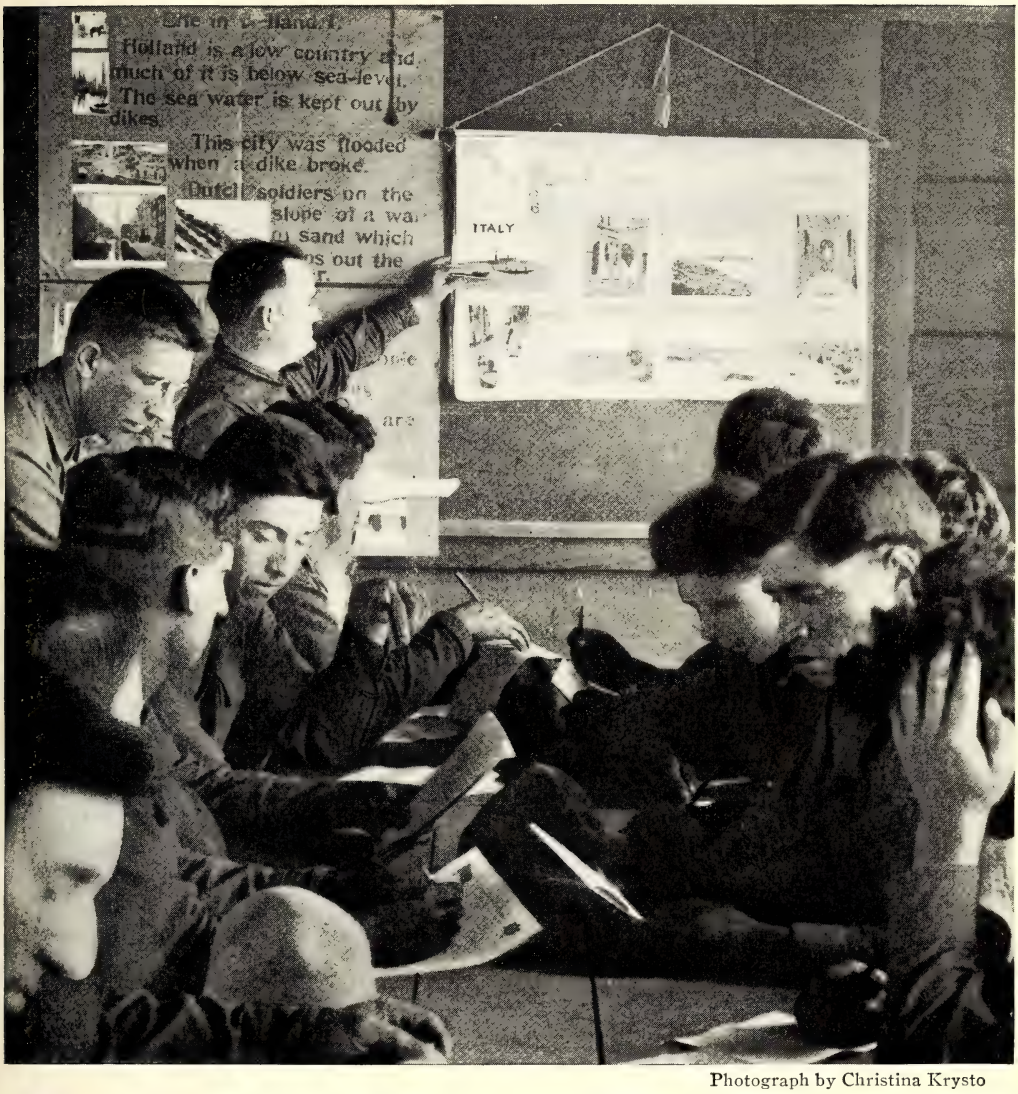
All too soon the three days had gone; normal school closed its doors; Miss Baughman left us to our fate, and we, the khaki-clad roomful of "permanents" and a few outsiders who were given the privilege of assisting, scattered through the various units of the huge, sun-baked, dusty camp and took stock of our surroundings.

Quarters? The Y. M. C. A. lecture halls, with the eternal graphophone grinding in the next room; dim, empty mess-halls, and, out at the remount station offices, a saddle shop the door of which somebody was forever forgetting to unlock on time.

Hours? Classes met after supper, the men dull and tired after a day of trench digging and drill and scorching sun; the classes met in the afternoon unless other duties interfered, and other duties, it seemed, were always calling.

In some of the units, through the tireless efforts of the chaplains, the learning of English was put on an equal basis with drill, and men marched into the mess-halls, cheerful and alert, ready for this extra branch of soldiering; and we wondered, as we talked with these chaplains, whether they knew how thoroughly fraught with importance was their work of pioneering.

Equipment? Here and there a blackboard; here and there a piece of chalk, an eraser, wrapping paper for notebooks; for the most part a few long benches, a table, the teacher's two bare hands, and that intangible something which had had its beginning in those first


Holland is a low country and
much of it is below sea-level.
The sea water is kept out by
dikes.
This city was flooded
when a dike broke.
ITALY

Photograph by Christina Krysto

"IN THE HANDS OF A COMPETENT TEACHER, THE CHART BECOMES AN INEXHAUSTIBLE SOURCE OF INFORMATION"

Without photographs the study of geography in connection with the war would be a difficult matter for men who have not learned the trick of imagination

three days and which took from the camp classes the taint of the "Mex" and the "Wop" and the "Squarehead" and made them all plain fellow-men—Americans. Is it not, after all, a little strange to speak of *foreigners* in the American Army?

PATHETIC INADEQUACY OF PRIMARY TEXT-BOOKS

But we could not teach on that alone. We looked through the supply of books to be had, the discarded readers of public schools, and we put them back into their boxes. First-grade readers! We had visions of six-foot Juan Lopez intoning,

"Run with me
To the tree,"

while he ached for a fuller understanding of "tent," and "rifle," and "guard," and "bayonet." We could hear our advanced pupil, Gus Nelson, trying to satisfy his

HOLY LAND
The inhabitants of Palestine are Jews. They live now as they lived two thousand years ago. Their dress and manners seem very strange to us
inhabitants
thousand

Photograph by Christina Krysto

"THE PALESTINE CHART, MADE FROM THE GEOGRAPHIC, WAS A JOY TO MAKE AND A JOY TO TEACH"

Often, though not always, the teacher of the same nationality as the class finds a readier response from the pupils. The young Italian in this photograph welded his Italian class at the base hospital into a friendly unit, of which he was very definitely the center.

Photograph by Christina Krysto

AFTER A CLASS OF FOREIGN-LANGUAGE SOLDIERS HAS BECOME THOROUGHLY FAMILIAR WITH THE CHARTS MADE FROM THE PICTURES OF THE NATIONAL GEOGRAPHICS, IT IS READY TO TRY THE MAGAZINE ITSELF

Among the issues of the GEOGRAPHIC in which these boys in khaki are engrossed, there may be identified one of the Bird numbers, the Aviation number, and the Flag number

craving for a knowledge of aëroplanes with the story of Aladdin's lamp. We wondered where those paper-bound pamphlets of fables and myths would fit in.

We reached joyfully for the histories and found them built about the tales of the Crusades. One world map,—that was a glorious find—one world map upon which to build our empire!

To be sure, as time went on we found use even for Aladdin's lamp and sent for more discarded Fourth Readers. But that was when we ourselves discovered the connection between that lamp and aëroplanes. At the start we set about the manufacturing of our own "books."

Charts were not new to us. Standardized Peter Roberts charts and leaflets, dealing with military terms, camp etiquette, the care of the clothing, could be had ready made and were excellent. Lessons based on the vocabulary of the General Orders,—some day perhaps a tragedy will be written on the non-English-speaking soldier and his General Orders—these, too, had their place. But they were not enough.

FIRST STEP—CONVERSATION

All beginning lessons of immigrant education must center about conversation. Much as he longs for the book and easily as he learns to read, the foreigner, whether in military camp or factory, needs, first of all, to understand and to be understood.

There is nothing more difficult than to make a foreign pupil *talk,* for the courage which is his when his hands grasp a book and his eyes are glued to its page forsakes him when hands and eyes lose their support. And between straight reading and straight speaking comes the picture chart.

The subject-matter for beginners' charts centered about such words as "gun," "shoot," "soldier," "officer," "march," "drill," "tent," "eat," "run," "hear," "see," and we thought that they would be easy to make until we tried to find appropriate pictures for our illustrations. The "intermediate" charts were easier, and they were determined by a few brief questions in class.

We take so easily for granted the soldier's—any soldier's—knowledge of the tools of warfare. We somehow believe that even though he has neither newspapers nor magazines, neither lectures nor casual war conversation, he still, by virtue of his months in a military camp, acquires military information through the pores of the skin, as it were. Which is true perhaps of the care of his gun and the hours for mess.

THEY LACK PRIMARY CONCEPTIONS

What is a tank? What is a submarine? What is a howitzer? Out of what are aëroplanes made? What is a transport? What is a destroyer? What is Red Cross? It is not that many of these foreign soldiers lack the English words to tell us. There is no concept of the things themselves.

We gathered photographs and more photographs from the magazines in the camp library store-room. We procured huge sheets of wrapping paper. With these and with a stamping press, and scissors, and inkpads, and glue we made our charts—the tank and the aëroplane and the ships in the process of construction, at rest, in action, with appropriate words and legends printed under the photographs. All these were, primarily, for the less advanced classes, though we who made them gathered much new knowledge as we worked.

"HOW DO WE GO TO FRANCE?"

The geographic charts came later. It was Corporal Pickett who raised the question. Corporal Pickett—he is *Private* Pickett now, for he learned that only privates were wanted for the last contingent which went across—taught a class in the 160th which met in the evenings stupid with weariness. Truly, this class needed a bright and stirring lesson. The magic word "France" was in the air, and Corporal Pickett asked a question, thinking of a lesson in transportation:

"How do we go to France?"

The class, to a man, looked him over indifferently and said no word.

"Aw, come on now, fellows; how do we go to France?" A very baffled teacher he was, face sunblistered, hair upstanding, despair in his eyes. "José Cano, don't you know how we go to France?"

"We go," said José Cano, laboriously, "on train. Bimeby, maybe, we walk."

Those men left for France the following week.

"FROM NEW MEXICO TO THE UNITED STATES"

We held a council of war that evening. A fellow-teacher from the remount station joined us, coming with the light of a stupendous discovery in his face.

"What do you think I've run across?"

We could not guess.

"Romero was having a time with his words. I asked him how long he had been in the United States.

"'Seven months,' he said.

"'How long in Camp Kearny?'

"'Seven months.'

"'Where did you live before that?'

"'Mexico.'

"I don't know what made me ask the next question:

"'*Old* Mexico?'

"'No, New Mexico.'"

In New Mexico all his life, in the United States seven months! An American citizen by virtue of his birthplace, and America to him was a military camp set in the middle of a desert!

Later we ceased to be astounded. There were many from New Mexico. And we found not a few among them who, when they left New Mexico, came to the United States.

So the geographic charts really had to be, and, much as the beginners liked them, it was among the more advanced classes that they found their true appreciation.

When war is so much a matter of geography, it is inconceivable that a lecture or recreation room in any camp building can be considered even partially equipped without a world map on the wall.

However determined and loyal a soldier may be, it is hard for him to wax enthusiastic over a war which is being waged somewhere off in space. And it is no less difficult for him to have a notion of the part which various countries have played and are playing in this war unless he knows something of the countries themselves. "Allies" is, at best, a hazy word, unless one can tie it down to some sort of a picture or a printed page.

THE RAID ON THE GEOGRAPHICS

Back in the camp library, scissors in hand, we smiled our way past the dubious librarian and slipped into the alluring store-room.

"Anything but the NATIONAL GEOGRAPHIC MAGAZINES," he cautioned.

"Nothing *but* the GEOGRAPHICS," we assured him, and held firmly to our point.

Belgium, France and Italy, England and Holland, Mexico and the British Empire—we made charts on all of these and then found Palestine, and the Palestine series was a joy to make and a joy to teach. The rich, glowing colors of the illustrations, the stirring appeal of the recent Jerusalem campaign—nothing but the initial stand of Belgium touched those classes as did the war story of the Holy Land.

THE NORTH AMERICAN MAMMALS NUMBER

Presently we deviated from our geographic path. We came upon the North American Mammals number of the magazine.

It took us long to make the three charts which exhausted those pictures. Over the bears, especially, we lingered, with our fingers in the gluepot. We rather expected a cheerful welcome for that chart, but the shout of joy from our most stolid beginners surpassed our greatest hopes.

"Little white baby swim," said Pablo Moreno, cautiously enunciating his words, as he stared at the tiny Polar bear which was being towed by the mother.

"Big brown bear look under rock for lizar'," added Pedro Ramirez, not to be outdone. It was an unexpected sentence, and yet, who knows, perhaps that is just what the big brown bear is looking for.

The chart on trees was hardly less effective, especially at the remount station, which very soon will be the Paradise of the camp, because its major believes that trees are the beautifiers of the earth, and acts upon his belief. The remount soldiers may not know how to dig trenches, but surely holes for trees have no terrors for them. With the photographs of the giant redwoods we combined those of forest fire and let the class draw its own

Olives are grown in Palestine This family is crushing the olives with a round stone to make olive oil.
This old Jew is a carpenter. Jesus was a carpenter in Naz areth 1918 years ago.
This woman is spinning wool
Straw is used to make baskets
PEOPLE of the PHILIPPINES

Photograph by Christina Krysto

THEY TEACH OUR FOREIGN-LANGUAGE SOLDIERS BY USING UNIVERSAL LANGUAGE CHARTS—PICTURES

A squad of Camp Kearny soldiers who absorbed a six weeks' normal school course in three days and then put their knowledge into practice with the aid of picture text-books made from copies of the NATIONAL GEOGRAPHIC MAGAZINE

conclusions, which it did, quite satisfactorily, as follows:

"Big fire start with cigar; we fight with wet sacks."

HOW THE PICTURE CHARTS ARE USED

Left to themselves, the pupils read the legends stamped under the photographs, look at the photographs themselves, and clamor for another chart. But in the hands of a competent teacher, the chart becomes an inexhaustible source of information. Tacked up on the wall beside a map, it gives use to an endless conversation, whenever the teacher insists that the answers to his questions be given in full.

"Where is Holland?"

"What are the countries around it?"

"What do we call the people of Holland?"

"Is Holland at war?"

"What are the products of Holland?"

"Why would she be an important ally?"

"What is meant by 'below sea-level'?"

"How are Holland's low fields protected?"

"What happens when a dike breaks?"

"How could dikes be used in warfare?"

"What did the Belgians do with their dikes when the Germans overran the Belgian lowlands?"

"If Holland is neutral, why do we see so many cannons in the photograph?"

"What other country uses dogs to pull loads?"

The list of questions is without end. Most of the answers are found in the photographs attached; some come from the map; some rise unexpectedly out of a bit of vague, half forgotten information; still others have to be supplied by the teacher.

At first glance, the questions may appear difficult. One would suppose that men who could answer them were in no need of immediate instruction. But the weakness of those "advanced" classes lies just here; that the men who understand fairly well talk haltingly, timidly, with countless errors of pronunciation and sentence structure. Yet their minds, in their native language, if one may use the term, are reaching out for a fuller understanding of the war itself, and the craving must be satisfied.

THE CHART OF THE UNITED STATES

We waited for a time before making a chart of the United States, though we held our photographs in readiness. Perhaps we were beginning at the wrong end when we taught the countries of Europe first; and yet Camp Kearny is already a part of the war and the war is in France. But when Mr. Olsen, of that "crack" class which holds three Mexicans, two Italians, one Greek, one Austrian, one Pole, one Russian, one Dane, and Mr. Olsen, asked for a chart of America, we had it ready for the next afternoon.

It was a chart from which might be taught a lesson of the opportunities offered by the United States. A city street there was, and several factories, a model farm, a railroad through a seemingly hopeless ravine, an artificial lake, Niagara Falls—queerly enough not one of the class had ever heard of Niagara Falls—the redwoods of California, the jungles of Florida, the snows of the North.

They had a good time with that chart. They peopled the office buildings with professional and business men, they built the dam from canyon wall to canyon wall, they quarreled over the railroad bed. We discovered that "in the old country" our Polish friend had tried his hand at engineering, that Mr. Pappas had once walked from one end of Florida to the other, seeing "many snakes, long and some short"; that Señor Luna's brother had recently struck gold on the slopes of a desert mountain in Arizona.

Not many questions were needed that afternoon to stimulate conversation. And when the hour came to an end, the excited Lipnitzky was quarreling with Señor Chavez over the advantages of turbine wheels and getting the best of the argument.

THE MEXICAN AND THE ITALIAN PUPIL COMPARED

It is customary to believe that the Mexican is indifferent to learning English and the Italian is eager for the opportunity, yet some of the finest pupils in Camp Kearny are Mexicans. The difference lies chiefly in the method of attack.

The Mexican, quite unconsciously, plays at indifference, yet is disappointed

if the lesson is not thrust upon him. The Italian reaches out for information. A Mexican, in studying a chart, will answer stolidly and reluctantly, and then, after class, will stand long and thoughtfully before it. An Italian begins to talk before the chart is really in place and, given a chart of Italy and an Italian class, the passers-by out in the street will stop to listen to the result.

The question of who learns the more quickly is easily answered. But we cannot dispose so easily of the question which deals with the wish to learn.

And, indeed, after a very few days with our charges, we stopped wondering whether or not the foreigner wants to learn his English. The terrible pity of it is that we do not always realize in time just how *much* he wants to learn.

There was a man out at the remount station who was pointed out to us as sulky and indifferent. "The typical Mexican," so the introduction ran. The teacher took him in hand. He was coaxed and prodded and "encouraged" for days, and with each lesson grew more silent, less responsive, more ill at ease.

And then one day, when a question too many had been hurled at him, suddenly and without warning,—unless one choose to take as warning his "stubbornness," his "unresponsiveness," his "stupidity"—his head went down into his arms. And in the silence which followed, as pupils and teacher looked away from his shaking shoulders, there rose a dreadful accusation, which reached far beyond the boundaries of Camp Kearny.

It was, after all, very simple. The class was getting away from him; he could not keep up with the work and he felt himself being left behind. He, too, had come from New Mexico into the United States.

AFTER THE WAR

After the war, whatever else may be, the world will become a smaller place. Geography will become a more friendly, more intimate thing, more closely connected with the every-day opportunities of man.

In those opportunities the foreigner at home will have a share; the "foreign" soldier will come "home" to them. Whatever aid he may be given now toward a better understanding of the world as a whole will not be lost, especially when in learning of the world he learns to speak the English language a little more readily.

And so we are glad we found on that evening, in the store-room of the camp library, the pile of the GEOGRAPHICS.

RECENT OBSERVATIONS IN ALBANIA

By Brig. Gen. George P. Scriven, U. S. Army

OF THE country in general, it may be said that Albania, as delimited by the maps existing before the war, is now under control of the Germans, the Austrians, and the Bulgars to the north of the latitude of Berat and the lakes, and under control of the French and the Italian troops to the south. The Greeks as yet have no control within the boundaries established by the Conference of London, while the English and the Serb theaters of operations lie in Macedonia.

The western part of southern Albania (soon perhaps all of west Albania, if the present Italian success carries on) is the more important section on account of the richness of the valleys and the value of the harbors on the Adriatic Sea. This territory is in the hands of the Italians, and is the part of Albania which forms the crux of the problem under consideration. Its disposition will determine the future fate of the country, for I believe that as this region goes so will Albania as a whole go. It would be idle as well as wrong to attempt to break asunder this numerically small but homogeneous race of mountaineers.

The sector occupied by the Italian troops at the present writing runs north of the river Viosa (also called the Voi-

ussa) from about the bend of the river Semeni, with the Adriatic on the west, Greece to the south, and by the left flank of the French Armee d'Orient on the east, in the neighborhood of Ersek, on the line of communication from Santi Quaranta to Saloniki.

The French sector is smaller than the Italian and numbers fewer people, though within its boundaries are included the lakes Ochrida and Malik and the fertile valley of the latter, in which is Koritza, probably the wealthiest town of the country.

Throughout southern Albania—indeed, probably throughout all of Albania in these days—government is administered by the armies of occupation. The people have little to say as regards their own affairs and have been almost completely disarmed. In the Italian section, however, many local prefects and magistrates hold office and administer the law as it now exists, the old Turkish Code having been partially replaced.

NATIVES APPOINTED TO OFFICE

For this administration lower courts have been established, methods of procedure drawn up, and, wherever possible, natives have been appointed to minor offices. This recognition of the Albanians and delegation of authority to them has caused great satisfaction. They are beginning to understand that under the mild military control of the Italians they are treated simply as Albanians, without regard to religious differences. No iniquitous distinction in law is now made between Orthodox, as the people of the Greek Church are called, and Mohammedan. In this respect the Italian wisely differs from the Greek, who, perhaps naturally enough, sees little good in the Moslem.

The French have gone a step further than the Italians in Albanian affairs, last year proclaiming an Albanian republic at Koritza. Of this, however, at the time of my visit to Koritza, I could find no trace. The republic seems to have died quietly and naturally. It probably had no support from the people and was a forced attempt of the foreigner, upon whom the Albanians always look askance.

As a matter of fact, the Republic of Koritza had no reason for its existence. It seems that an Albanian, Germani, had been induced to come over from the Austrian camp to become prefect of police, a most important post in the new republic, but something went wrong with Germani; he has disappeared. At all events, Koritza and the surrounding country today remain under French control. A civilian prefect holds office, presumably under the general commanding, but a council of fourteen natives assists him in an advisory capacity.

MOST ANCIENT RACE OF SOUTHEASTERN EUROPE

The Albanians are regarded as the most ancient race of southeastern Europe. There is no record of their arrival in the Balkan Peninsula, no legend relating to their origin. They are thought to be descendants of the earliest Aryan immigrants, and with praiseworthy persistence have retained their mountain strongholds through many ages.

Except for Byron's casual tribute in "Childe Harold," the Albanians, unlike other peoples of the Balkans, have not been praised in song or story. Indeed, they appear to have received but little attention from the world, except to be characterized as a turbulent race of mountaineers, whose principal occupation has been to fight among themselves when not engaged in fighting against some one else. But, like the early Swiss, these rude, untutored people possess many primitive virtues. They have preserved with remarkable tenacity the traditions of their descent, and are brave, honest, and hospitable. Their lives having been spent in constant conflict with nature in its most unfriendly aspects, they have been taught from infancy to fight against man as readily as against the warring elements of the air.

THE BLOOD FEUDS OF A FEW YEARS AGO

Albania is notorious as the land of the blood feud—a tribal, or perhaps more properly a racial, custom observed for many centuries. Travelers and commentators usually refer to the Albanian mountaineer as utterly lawless, but in reality his actions toward his fellow-men, up to a few years ago, were based upon

Photograph from Gen. George P. Scriven

THE LION OF ST. MARK AT VUNO: ALBANIA

While not imposing in appearance like the famous Lion of Lucerne, similarly carved from the living rock, this bit of sculpture tells an interesting chapter in the history of Albania. It is a relic of medieval times, when Venice was not only mistress of the Albanian coast but the greatest commercial power in the world.

the strictest possible observance of law—a tribal law founded upon a most distorted idea of personal and family honor.

The smallest infraction of custom—a blow struck in anger, an unwitting shove in a crowd—inevitably led to the declaration of a blood feud, and the honor of the injured party was sullied until he had slain either the actual offender or some male member of his family. The relatives of the slain individual were then compelled to take up the man hunt, and thus the feud spread.

So fatal were these feuds that in some mountain districts it is said an old man is seldom to be encountered, in spite of the traditional longevity of the Albanian race. The men were killed off before they attained patriarchal years.

Many are the curious customs and rituals growing out of the blood feuds. It is the unwritten law of the land that a man must not be attacked while accompanied by a woman, and frequently a wife, daughter, or sister follows her menfolk on all journeys through the mountains in order, by her presence, to furnish protection from an implacable foe. Formerly in certain districts, it was possible to buy immunity from the vengeance of an aggrieved Albanian, the price varying from $50 to $80, according to the locality.

A rigid code protects a guest in the mountain fastnesses, and if a traveler has slept under the roof of an Albanian the host, according to tribal law, is obligated to declare a blood feud against any person who insults or harms the visitor within a certain length of time after he has been entertained.

A CHANGED ALBANIA

Such is a picture drawn of the people of Albania less than a decade ago. It is in striking contrast to the country as I saw it a few weeks ago, under the control

Photograph from Gen. George P. Scriven

IRON-SHOD WAR HAS CROSSED AND CRUSHED THIS ANCIENT BRIDGE OVER THE RIVER VIOSA AT KLISURA: ALBANIA

Albania's rivers will never help to solve the country's major problem of transportation, for none of them is navigable save the Boyana, which flows for 14 miles from Lake Scutari to the sea.

of the French and Italian armies. The change is especially conspicuous in that part of Albania which is under Italian administration. There the children are sent to school; the natives are paid more than a living wage for work which often is for the benefit of the people themselves; the country is effectively policed by the soldiers; and not an armed native, except of the Bandes, is seen from one end of the occupied territory to the other.

If feuds still exist they are unfulfilled and secret, for the arms of the mountaineers have been taken from them by the troops, and among themselves the Albanians are practically at peace. The old conditions will probably never return. Light is coming to Albania!

It seems probable that with political changes will come religious changes also, for, together with the Turks, many of the Moslem natives were driven from Albania; and with the coming of Italian schools and churches much increase in the influence of the Roman Catholic Church must naturally be felt.

Under the Turks the great majority of the Albanians, probably more than three-fifths, were Moslems. The conversion of the Christian population to Islam appears to have taken place during the sixteenth and seventeenth centuries. Of the Christians about a sixth are Roman Catholics, the remainder Orthodox, or followers of the Greek Church. In deference to popular prejudices, the bishops and priests of the Catholic Church wear the moustache and are typical specimens of the church militant.

Before the Italian occupation, education was almost non-existent in Albania; both Christian and Moslem were, and the adults still are, totally illiterate. Under Turkish control, instruction in the Albanian languag was prohibited for political reasons. A single exception was made in

Photograph by F. J. Koch

ONE FAMILY, OR CLAN, OF ALBANIANS

In certain remote mountain districts of Albania, the tribal law, known as the Canon of Lek (a legendary lawgiver), still obtains in full force. By this law a man is complete master in his own house and may even kill his wife or children. Marriages are frequently arranged in infancy and may be consummated when the girl becomes 14 years of age. Among mountain clans the women till the soil in the valleys while the men guard the flocks on the hillsides.

the case of a little American school for girls at Koritza, which I visited.

In the days of the Turk there were primary and secondary schools in some of the towns, and instruction in the Koran was given in the village mosques, but neither reading nor writing taught.

ALBANIA UNDER THE AUSTRIANS

It is true that at Scutari a college and a seminary were established, with the aid of the Austrian Government; the Franciscans had several primary schools and three lay schools were supported by the Italian Government, in its endeavor, even before the occupation, to educate the people. In all these institutions Italian was the language of instruction. The priests of the Greek Church, upon whom the rural population depended for instruction, were often deplorably ignorant.

Of the Albanians north of the Allied lines no information is, of course, available, and the attitude of the Austrian, the German, and the Bulgar toward these unfortunate people is an unknown story, a hard one, I am inclined to think, from the rumors of hardship and forced labor which are current.

Though no census of population has been taken, it is estimated that the Albanians as a whole number some two and a half million people.* Their home land is a magnificent country, with its chaos of grand mountains, deep and fertile valleys, and beautiful streams — a region without forests, almost without woodlands, it is true, but superb in its stern majesty.

* An estimate given me in conversation in Albania as covering the entire race. It may be an overestimate.

Drawn by A.H.Bumstead

SKETCH MAP OF ALBANIA AND ITS BORDER COUNTRIES OF THE BALKAN PENINSULA

The sector of Albania now occupied by Italian troops runs north of the river Viosa from the bend of the river Semini to the Adriatic on the west and the French Armee d'Orient on the east (see pages 90 and 91).

The more attractive part of southern Albania lies, of course, near the Adriatic. Fruits and grain are profitably grown along the seacoast, with its sunlit inlets shut in by pleasant hills and with a climate which resembles that of Sicily.

Excellent grazing lands extend up the mountain sides, affording pasturage in times of peace for large flocks and herds, the people's chief source of livelihood, while fish from the sea and the rivers and game from the hills—deer, wild boar, hares, game birds, bear, and even the chamois—are important resources.

THE STRANGE RUMANI

Among the Albanians lives a fragment of a strange people who call themselves Rumani, said to be descendants of the Romans — of that fifth Roman legion which dispersed and was scattered along the old highway stretching from Durazzo to Constantinople. This great road of ancient Rome (Via Egnatia), called at its beginning the Appian Way, passes southeast through Italy to Brindisi; begins again at Durazzo, runs thence through Elbasan by Lake Ochrida to Krusha, and on to Monastir and Vodena; thence to Saloniki and beyond to Constantinople.

The Rumani are very proud of their origin, and answer the question of race by saying, "I am a descendant of the Romans." They are a simple, pastoral people, not given to robbery or brigandage. Their primitive little villages of stone are frequently seen in the mountains, often perched near high summits. A large colony of them, known as Vlachs, live on the slope of the Pindus Mountains in sight of Liascoviki, but far away across valley and gorge.

Photograph by Katrice Nicolson

ALBANIAN MOUNTAINEERS IN BLACK-BRAIDED NATIONAL COSTUME

As limited by the Conference of London, Albania has an area about equal to that of New Jersey and Delaware, but with only 800,000 inhabitants, about one-fourth the population of those two States. Less than a third of the Albanians reside within the territorial limits of their country

Photograph from Gen. George P. Scriven

THE MOST EXTENSIVE RUIN IN ALBANIA: THE CASTLE OF ALI PASHA AT TEPELENI

Three names tower above all others in the history of Albania—Pyrrhus, rated by Hannibal first among the warriors of his age and the captain who caused both Rome and Carthage to tremble for six years; Skanderbeg, the national hero and for a time conqueror of the Turks; and Ali Pasha, surnamed the Lion of Tepeleni, one of the most remarkable and picturesque figures of modern times.

From the heights where they graze their flocks in summer, the Rumani descend into the valleys in winter; and on the road men, women, and children, surrounded by their hundreds of sheep and goats in search of grazing lands, form a picture of nomad life that reminds us of the days of Abraham.

There are said to be some 80,000 of these Rumani; but who really knows their number, scattered as they are over hundreds of mountain peaks, in inaccessible villages or caves and moving from place to place?

TOWNS OF SOUTHERN ALBANIA

The towns of southern Albania are few and, though strange and picturesque in appearance, are in reality poor in comfort. Of cities there are not any. Koritza, with some 20,000 people, is the largest place, but it is far from being a city. However, if the towns are somewhat mean and squalid, they are interesting to the eye and have the charm of old-world quaintness. There are but four worth mentioning: Arjirokastro, so old, at least in appearance, that its origin falls back into the mists of time; the pleasant village of Premati, lying in a fertile valley along the river Viosa; Koritza, held by the French; and Valona, clean and thriving under the Italian army.

They are all pleasant places to look upon, nestling among the mountains, in the valleys, and by the sea, with their old gray walls and roofs of stone dotted with storks; but they possess none of the comforts or conveniences of modern life.

Such matter-of-fact things as trams, hotels, or cafés do not exist in Albanian towns and would seem wholly out of place. Water is drawn from the wells as it was 4,000 years ago, or maybe from some near-by stream. Inns are represented by the khan, a stone building, half house, half stable, where caravans and pack trains stop to rest.

Albania belongs to a time as far back as the annals of the world can reach and is as primitive as if it were in central China, almost as difficult to penetrate as Tibet itself. It is a land unfamiliar to the traveler and shunned by the tourist of today.

This was not always so, however, for along the Adriatic coast and behind the mountains that face the sea are many relics of the golden days of Venice and even some traces of Roman occupation. We know that Venice once highly prized the western shores of this beautiful region, and the sway of the Mistress of the Adriatic in medieval times is attested not merely by the fortress, strong for its day, which defended the roadstead of Porto Palermo, and by the Lion of St. Mark, roughly carved in the solid rock above the village of Vuno in the Chimara, but by the remains of many castles upon the hills.

Above Arjirokastro and above Valona stand two of these Venetian ruins; but the greatest castle in Albania was the one whose ruins I saw in the old town of Tepeleni. It was not Venetian, but the birthplace of Ali Bey, the great Albanian leader, who afterward became a Turkish Pasha of three tails. Beside the greater ruins of this old castle stands the crumbling town, on the banks of the brawling Viosa at its junction with the Zrinos and facing a mountain gorge which is a gateway to Macedonia, where once a Roman legion defeated the Eastern hordes.

THE PICTURESQUE MOUNTAIN VILLAGES

If the three or four centers of population in southern Albania are a little disappointing as cities, this is not true of the country or of the picturesque villages which gather like gray splashes upon the grayer hills, where they appear to have nestled since the beginning of time. Rough stone huts they are for the most part, with flat stone roofs. For purposes of defense, they are usually situated half way up the lower hills, and the houses and outbuildings are often surrounded by strong stone walls.

The valleys are rich and well cultivated, chiefly by the women, but present a desolate, deserted appearance, except in the daylight working hours. Not a farmhouse nor a stable is to be seen amidst all the fertile acres. The crops cannot be stolen; no bandit would think of destroying them, and so they are left unguarded.

Both the people and country of Albania strongly remind the stranger of

Photograph by Katrice Nicolson

MEDIEVAL CITADEL OVERLOOKING SCUTARI: ALBANIA

During the Venetian occupation of Albania, in the middle ages, this lofty rock rising behind Scutari was strongly fortified. When the Turks came into possession of the country they partially rebuilt the old fort. The crest was the scene of a bitter struggle between the Sultan's forces and Albanian revolutionists prior to the declaration of the nation's independence by the Powers of Europe more than five years ago.

Switzerland as it must have looked in an earlier day, when it was more lovely and more unpeopled than in modern times, since it has become the summer playground of Europe. Some day, no doubt, Albania will be discovered by the world; and when it is, great will be the change therein and great will be the eagerness of people to see its wonders and enjoy its charms. Albania needs people, enterprise, and money; if given these three things, its development will be sure.

The people of Albania are first nationals and then religionists. Discord among themselves, chiefly between Christian and Moslem, has been one of the most

Photograph by Katrice Nicolson

THE LOWER PART OF THE TOWN OF SCUTARI: ALBANIA

Before the European Powers agreed, in 1912, that Albania should be an autonomous nation, Scutari was the capital of a Turkish vilayet, but Constantinople's sway over the Albanians was more nominal than real. A traveler reports that on one occasion a gendarme pointed to a passer-by and said with admiration, "That is a brave man, much respected; he has killed more of his fellow-townsmen than any other Scutarine." In those days, assassination is said to have been regarded more as an amusement than as a crime.

THE MARKET-PLACE IN THE TOWN OF TIRANA: ALBANIA

The Albanian townsman affects two types of headdress—a white skull cap and a scarf twisted around his head and under his chin, after the fashion of a Bedouin. Cattle-raising is the chief source of livelihood for the mountain tribes. The small pack donkeys loaded with wood, to be seen in the middle distance, bespeak the fact that wheeled vehicles are seldom encountered in the hill districts, owing to the rough trails which, by courtesy, are called roads. In southern Albania the Italian army of occupation is now building many miles of unsurpassed highways (see page 110).

Photograph from Gen. George P. Scriven

AN AMERICAN TRACTOR PLOW IN USE ON THE EXPERIMENTAL FARM AT VALONA: ALBANIA

This farm, conducted under the auspices of the Italian Government, is intended primarily as an example to Albanian tenants and proprietors who are inclined rather to the use of the ancient crooked-stick plow. It serves the Italians as a huge war garden, however, for its tillers are obliged to sell their products exclusively to the troops.

serious evils in the past; but this has been checked, to some extent. The religious troubles, if unfermented by Greek or Turk, perhaps would have been no greater than in Switzerland of the past or in Ireland of the present. The factions, if permitted, will soon learn to live in peace.

In the past, under the Turk, whose laws were made to be violated, order did not exist; the hand of power punished, but it did not lead. So it happened that schools were neglected and the people, for the most part, remained illiterate. The young Turks were probably allowed to attend or not to attend the indifferent schools provided, but the Albanians were allowed no schools taught in their own language. Their children, if instructed at all, were taught in the Turkish or the Greek schools. In spite of this, the children are intelligent and those whom I saw in the Italian schools were bright and eager to learn.

THE ALBANIAN AN OPEN FIGHTER

But, ignorant or not, the Albanians have in them the making of real men and women. The man is a fighter, but an open fighter who scorns a treacherous advantage; he believes in the vendetta, but will warn his adversary before striking him. If he becomes a bandit by profession, he is not in his own eyes an outlaw; he lives beyond the control of law. He strikes his enemy, but would scorn to be a mere murderer and is above being a thief. Honorable in his dealings with strangers who are properly accredited to him or his community, the latter are safe under his roof. He is especially honorable in his attitude toward women. It is said that before the war, alone and un-

Photograph from Gen. George P. Scriven

CELEBRATION AT VALONA WITH ITALIAN OFFICERS AND NATIVE CLERGY IN THE STAND

Valona is one of the chief cities of southern Albania and is beautifully situated on the shores of the Gulf of Valona. Under the Italian influence it has been made to thrive and prosper.

protected, a woman could travel safely from one end of Albania to the other.

The women are worthy mothers of the men. Industrious and hard working, I have seen hundreds, indeed thousands of them, some with their little children, sitting by the roadside with a few old men, breaking stone hour by hour through the long day, hot or cold, and earning from the Italian Government three lire per day with their bread and cheese. Even the little children are given the latter in payment for their puny efforts. No doubt the French pay as well as the Italians; and so the people live better now, probably, than in times of peace, since their bread is secure.

In Albania the women are the workers, the Orthodox more so than the Mohammedans; but all work. They are moral too; prostitution is unknown, and so an illegitimate child is said to be a disgrace to the mother, the family, and the community.

The Albanians are somewhat harsh of feature, though the children are bright and the young girls are sometimes pretty. The unattractive appearance of the women is increased, if not caused, by the nondescript garments commonly worn in these days, shabby, ill-fitting, and fastened together anyhow or nohow.

Of the people of Macedonia, seen in the towns or along the roads and the countryside, the same may be said. In both regions there is little that is characteristic in the costumes. Clothing, generally of an inferior European make, is worn perforce, for even in Albania wool is now very scarce and dear.

The pretty national dress of the Albanian is seen only on gala occasions, when the men come out with the white skirt, over tight-fitting breeches, vest and coat of white wool, with the pointed, tufted shoe and white or red turban, and usually, especially in the rain, the long sheepskin cloak, generally black. The cap, or fez,

SCUTARI AND THE ENCIRCLING HILLS: ALBANIA

"Albania, although in sight of Italy, is less known than the interior of America," wrote the historian, Edward Gibbon, a hundred years ago. It is still largely *terra incognita*. A letter addressed to "Albania" was recently sent from England to America and was returned from Albany,

Photograph from Gen. George P. Scriven

THE EAST SIDE OF THE CASTLE OF ALI PASHA: TEPELENI, ALBANIA

When Ali was fourteen years of age his father, the hereditary bey of Tepeleni, was slain by neighboring chiefs. Whereupon his mother, a woman of extraordinary force of character, organized a brigand band and reared her son with the idea of avenging his parent's murder. Thus tutored, Ali in time became the most powerful pasha of the Ottoman Empire. As the undisputed master of Epirus, Albania, and Thessaly, not even Napoleon disdained to enter into an alliance with him.

Photograph from Gen. George P. Scriven

ALBANIANS DANCING AROUND THEIR OWN COLORS AND ITALY'S ENSIGN AT DELVINO: ALBANIA

"The wild Albanian kirtled to the knee, with shawl-girt head and ornamented gun," of whom Byron sang, is seldom seen nowadays, except on gala occasions, such as this. The native finds it cheaper to dress in factory-made clothes of western Europe. The poorer classes are never handicapped by extensive wardrobes; in some sections the inhabitants sew their garments on, and these are never removed until they fall off.

Photograph by M. A. Stein

MOUNTAINEERS IN GALA ATTIRE CELEBRATING A FEAST DAY IN TOWN: ALBANIA

Photograph from Gen. George P. Scriven

ON THE ROAD TO ARJIROKASTRO

"In these days the women seem to have no special dress. Sometimes they appear in trousers of a kind, with a long, legging-like stocking drawn over; sometimes they wear skirts and shoes, if they can get them." This one, wrapped in her white robe, is a Mohammedan, judging from the veil that obscures her face.

however, is worn when possible as a symbol of race.

In these days the women seem to have no special dress. Sometimes they appear in trousers of a kind, with a long legging-like stocking drawn over; sometimes they wear skirts and shoes, if they can get them.

The women of the poorer classes now appear hardly more than beasts of burden, carrying on their backs great bundles of brushwood, or maybe of heavy stones, that rest on a kind of wooden pack in the form of a shelf placed between the shoulders. In the fields, too, they are seen plowing or digging deep into the soil, always with sad, work-worn, patient faces that reflect the harshness of their lives.

THEIR CHIEF DESIRE

The Albanians are probably neither so good nor so bad as they have been painted, but certainly they are worth the effort necessary to develop them and their country. Their chief desire now is to be allowed to manage their own affairs and to work their little farms in the fertile valleys, to herd their sheep and weave their garments of wool, if only they are let alone. They do not submit easily to government; have no love for chance strangers, and are slow to accept change in the manner of living or of cultivating the fields.

Nothing has been said of the minerals that surely are to be found in the mountains of Albania. Little is known regarding the latter, for they are practically unexplored. It is not improbable that with the advent of the armies systematic search for mineral wealth will be made.

Mineral pitch, or asphaltum, has been known since the time of the Romans, and near Valona I have seen specimens, clean, black, and hard, which promise well.

THE ROAD BELOW THE VENETIAN CASTLE AT ARJIROKASTRO

Photographs from Gen. George P. Scriven

A STREET OF ARJIROKASTRO

"They are all pleasant places to look upon, nestling among the mountains, in the valleys, and by the sea, with their old gray walls and roofs of stone dotted with storks; but they possess none of the comforts or conveniences of modern life."

Traces of petroleum, too, have been found by the Italians, and I am told boring is, or is about to be, undertaken. Copper and iron are believed to exist in the hills about the Malik Valley, and coal, silver, and lead are said to be present elsewhere in the mountains.

Gold mines were worked in ancient times and Albanian silver was known to the Venetians, but the whole mountain country has lain neglected for ages. It cannot be doubted that with the coming of the soldiers, the building of roads, and the development of the country now going on, especially in sections occupied by the Italians, there will be a change in Albania and in its people.

Photograph from Gen. George P. Scriven

A REPRESENTATIVE OF THE OLDEST RACE IN SOUTH-EASTERN EUROPE

The Albanian calls himself a "Skypetar"—Son of the Mountain Eagle—and he deserves the appellation, for he has made his home among the barren crags of his native land for many centuries, maintaining to a remarkable degree his independence and his racial integrity.

CLIMATE IN UPLAND AND LOWLAND

The climate of Albania is considered healthful in the uplands, though subject to violent changes, which are trying to the stranger, at certain seasons, even if he is confined to one locality. But when a traveler, moving rapidly about the country in a motor—the only practicable way of traveling in these days—rushes several thousand feet from a mountain height, cold and windy and probably snow-covered, into a warm, sunshiny valley and back again in the fraction of an hour, it is well to have a care.

May is the pleasantest month of the year and the valleys then look their best. Snow, of course, lies in the mountains until well into the spring, but seldom lasts throughout the summer, as the tallest peaks do not attain an elevation of more than 8,000 feet.

Photograph by M. A. Stein

THE CUSTOM-HOUSE AND BOAT LANDING AT SCUTARI: ALBANIA

The boat commonly used on Lake Scutari is known as a *londra,* and somewhat resembles a Venetian gondola, though more crudely built. Both prow and stern are sharp-pointed and run high out of the water. According to its size, it may be propelled by from one to twelve oarsmen, who stand facing the bow and sing a wild barbaric chant as they force their oars through the water in short, quick jerks.

Malarial fever afflicts both Albania and Macedonia. The army medical report in my possession gives a rate of 25 per cent since the occupation of Albania—probably an average, for I have heard of one command having 80 per cent of its men sick with malarial fever at one time. However, the health of the troops at the time of which I am writing, the spring of 1918, was very good.

The fever of the Balkans is persistent, but is not especially fatal. Still, it is to be dreaded for its lingering effects and the great debility it causes. The usual specific is quinine, a supply of which is placed on the mess table or carried about in the pocket.

In Macedonia, especially north of Saloniki, in the Struma Valley, which produces probably the finest cigarette tobacco of the world, there is found a climate said to be as bad as that of the west African coast.

Winters are short, but cold and rainy, and the country roads become almost impassable lakes of mud, over which there can be little transportation. In consequence, military operations are limited to the few metalled roads that exist and to the dry season.

SPLENDID HIGHWAYS BUILT BY ITALIANS

Before the arrival of the Allies, one of whose first cares was to improve the roads, few highways existed in Albania and Macedonia, except the old Turkish road from Santi Quaranta to Saloniki, with its branches in the former country south to Janina, in old Greece, and north to Berat.

During my stay in Albania I traveled by motor over many miles of road built by the Italians—not mere ephemeral military lines of communication, but permanent highways, admirably traced and skillfully built. I speak particularly of the

Photograph from Gen. George P. Scriven

ITALIAN SOLDIERS ARE TEACHING ALBANIANS THE ADVANTAGES OF MODERN HUSBANDRY

Under the direction of General Ferraro, several up-to-date experimental farms have been established in southern Albania and the natives are being taught to use the most improved farm implements, such as American plows, cultivators, and harrows. In the valley of Monastir the British also are introducing modern agricultural methods; one of their army farms has an area of 1,000 acres.

magnificent 55-mile turnpike from Valona to Tepeleni and the highway from Santi Quaranta to Valona. The latter is probably one of the most interesting examples of road-building to be found the world over. It was constructed, under the direction of General Ferraro, by Italian soldiers and several thousand Austrian prisoners, aided by the Albanians of the country-side, who were paid by the Italian Government. It extends 81 miles, for the most part along the Adriatic, but high above the sea. Built for the permanent use of the people of southern Albania, as much as for military purposes, it is, like the old Roman roads, made to last through the centuries, and this is one of the superb highways of the world, both in point of construction and outlook. It was sufficiently completed for motor travel in the remarkably short time of about 67 days.

There is today a good metalled highway running from Valona all the way across the Balkan Peninsula to Saloniki, a distance of 363 miles. It is the old Turkish Highway which had long lain neglected and had become almost impassable in places, but which is now kept in excellent repair by the troops and money of Italy, France, and Great Britain.

It is almost impossible to conceive of the existence of a railroad in Albania; yet with the development of the country railroads will come, and who can doubt that this war, terrible and destructive as it is, will bring with it into the shadowy regions of the world the torch of enlightenment and progress?

Albania needs light and help from the great people of the earth. Too long has she lain in darkness, with the hands of her neighbors always at her throat. It is no wonder that she gropes in the infancy

Photograph from Gen. George P. Scriven

REPRESENTATIVES OF THE ITALIAN ARMY OF OCCUPATION AND NATIVE ALBANIANS AFTER A RELIGIOUS SERVICE AT CHIMARA: ALBANIA

In their conduct of Albanian affairs the Italians are drawing no distinctions between Moslem and Christian. Under the Turkish régime there had been discrimination against both the members of the Greek Orthodox and the Roman Catholic adherents for more than 400 years. General

of national life under the tutelage and restraint of the child; but she is a lusty infant, promising a sturdy maturity, when once a suitable and acceptable guardian for her can be found.

A LAND OF LARGE ESTATES

The lands of Albania are largely owned by great proprietors. Many of the estates were in the hands of Turks before the war. Others of the great land-owners are Albanians, among them the powerful family of the Vlores, at Valona, which is said to possess over 150 square miles of land. This family, Vlora (flower), gives the name Valona to the town. As an indication of the upheaval due to war in Albania, it is interesting to note that one of the sons of this historic house is now interned in Sardinia; one is in the Italian army; one is in Switzerland, and a fourth in Constantinople. The great ancestral home stands lonely and neglected—a roosting place for storks.

Farm lands are worked to a great extent by tenants, but some are owned and cultivated by the villages or communities, which they surround, and the ownership of these is secure. But what of the lands owned by the absent Turk or Albanian, of whom, as in the case of the Vlora family, some are sympathizers with the Allies, others with Turk or Austrian? This question looms large in the future.

Albanians hold to the ancient methods of farming. The crooked stick, sometimes reinforced with iron, still serves as a plow, and a pair of small oxen or an ox and a buffalo draw the implement. A great iron hoe is used by the women to break the sod. The ground yields abundant return, producing in the valleys, especially of the south, good crops of rye, oats, barley, and corn (maize). But sheep and goats are almost the only wealth of the people who live on the mountain slopes.

Forests are few and the mountains, as a rule, are rocky, barren, and stern of aspect. Often, however, they are covered with a low, green scrub. Occasionally, high on the mountains one sees pines and firs, even among the snow fields.

The Turk has never spared trees, and as a consequence both Albania and Macedonia are almost denuded. Even in the fertile valleys the oak, beech, poplar, and walnut are to be found in no great numbers. The plane tree is perhaps most conspicuous. Of fruits there are the mulberry, cherry, and pear, while in the Chimara, on the coast, the oranges and lemons are magnificent; and around Valona olive groves flourish and are well cared for by the Italians. Grapes which yield a fair wine are grown in Albania, and so, too, is tobacco.

NATIVES ARE STUDYING ON ITALY'S EXPERIMENTAL FARMS

By the application of modern farming methods the Albanian valleys of the south could be converted into veritable gardens. The Italians have made a beginning in the direction of training the Albanian farmer by means of experimental farms. The best of those that I have seen is at Valona. It is established in a valley north of the town, where there are some 400 acres under cultivation, producing wheat and such vegetables as onions, cabbages, and lettuce.

Excellent houses have been erected for the 35 farmer-soldiers detailed to cultivate this farm and instruct the natives, of whom about the same number are employed. The latter are paid one lira per day, together with a little food, principally corn meal.

For the instruction of the country people, as well as for practical purposes, modern methods of cultivation are used and approved farm machinery employed, including an American plow and a gasoline-driven engine.

The farm this spring was only in its second season, but already an average of 4,000 lire per month was received from the sale of the produce, chiefly, of course, to the markets of Valona for use of the soldiers. The farmer-soldiers are also raising pigs, chickens, turkeys, and pigeons and are experimenting with hares.

This is a great work, intended primarily as an example to Albanian tenants and proprietors, who are given seed and farm machinery by the Italian Government, but are required in return to sell their produce for the use of the troops. Prices are fixed at a moderate rate; for instance, eggs for the officers' mess at Va-

lona cost about 14 cents a dozen, whereas in Rome they sell for 50 cents.

The success of the Valona experimental farm is due to the efforts of General Ferraro, who is a great administrator and takes almost a boyish delight in this particular activity. I saw several other experiment farms: one at Liascoviki, in the heart of the mountains; one near Perati, at the junction of the Viosa and Sarandoporos rivers, and one in the rich valley of the Viosa, near Premati.

So the Italians have made a beginning, and a good one, in training the Albanians in improved methods of agriculture. But time and opportunity are necessary. Much has been done, considering that this is a period of war, and that all work of improvement behind the lines depends on conclusions fought out in front of them.

Who knows how much would have been done by the Italians for the improvement of Albania if they could have used both hands instead of being compelled to fight with one while they worked with the other?

THE UKRAINE, PAST AND PRESENT

By Nevin O. Winter

THE revolution in Russia has demonstrated to the world one fact long recognized by students of Russian affairs. It is that in the old Russian Empire there was little sense of nationalism or cohesiveness. While the racial homogeneity of the Slavs, the preponderant element of the population, has always been most pronounced, the term Russia meant little to the vast majority of the people. There was nothing that could compare with the love of the Anglo-American for the Stars and Stripes, of the Frenchman for his beloved France, of the Anglo-Saxon for Great Britain.

With the passing of the Czar and the authority of the church the only forces of cohesion disappeared. Were it otherwise it would not be possible for so many separations of large sections to follow without an apparent pang on the part of those still left or those going out for themselves.

It was but natural that Finland should revolt, for the Finns are not even Slavs. But in the case of Little Russia, or the Ukraine, there is a story that is worth the telling.

What is the Ukraine? This is one of the many questions that people are asking today. The Poles and the Lithuanians of a few centuries ago knew well this most turbulent section over which they attempted to rule, and Imperial Russia for a long time was greatly troubled by this very unruly part of her expansive domain. The Tatars and the Turks felt its proximity because of the many raids made upon them by the wild warriors of the steppes.

In recent years the Ukraine has quieted down, so that the casual students of today hardly realized that there was such a distinctive section left, living in the belief that the Slavs of the Ukraine, or Little Russia, as it is better known, had become thoroughly amalgamated with the Great Russians of the Petrograd and Moscow sections. The events of the last few months, however, have revealed the real situation.

The Ukraine has had a troublesome career. The wild Scythians helped to feed ancient Greece and her colonies from these same endless steppes whence Germany now expects to draw sustenance. A thousand years ago Kiev was already becoming an important place. When the Saxons still ruled England, in the long ago, the banks of the Dnieper were a meeting-place for many races, drawn thither by commerce. Religious differences had not yet arisen, for all were worshippers of idols. Even then a Slav people were safely established here, sowing and reaping their harvests and sending their surplus grain down this river to the Black Sea.

The name Ukraine means "border-marches." For centuries it was the bul-

wark that protected Poland and Lithuania from the Tatars, Turks, and other migrating Orientals. As a result it has had cruel taskmasters.

The native population was largely Cossacks—a wild and unruly people at that time. They were not originally a tribe, but were men who went forth into the wilderness to find freedom. The vast steppes, covered with grass to the height of a horse, within which a multitude of game lurked, lured them on.

There were Poles and Lithuanians and Russians and even Turks among them. They became marvelous shots, riders, and swimmers; their horses were famous for their swiftness and endurance. Their differences gradually blended in a unity of purpose and principle.

PRIMITIVE GOVERNMENT REPUBLICAN IN FORM

The name Zaporogians was applied to the community that was the heart and soul of the great Ukraine. Their government was crude, but very republican in form. Each year the old officers laid down their duties in the presence of a general assembly, even in that day called the Rada, and new ones were then chosen.

As any member of the tribe could be elevated to the highest office, it permitted each one to aspire to this dignity. The highest official was known as the "hetman." If unpopular, he was sometimes choked to death—an effective, if cruel, displacement.

They carried on an intermittent warfare with Tatars on the east, stealing their cattle and occasionally sacking the unprotected towns. Again, their warring excursions would be directed against the Turks to the southeast, in the Balkans. When tired of this they turned northward to the Slavonic population.

These early Ukrainians were ever at war with somebody and for somebody. They fought with Poland against Russia, with Russia against Poland, with Poland against Turkey, with Turkey against the Tatars. They assisted in placing an unfrocked monk upon the throne at Moscow. They were simply natural warriors who rejoiced in that occupation. The warrior shaved his head except for a wisp on the crown, which was allowed to grow long enough to wind around the ears.

Although professing the Orthodox Greek faith, they were the brigands and the corsairs of Christianity. Though nominally subjects of Poland for a long time, the Ukrainians were constantly involving Poland in trouble with the Tatar and Turkish rulers. At times they even captured Polish peasants and sold them as slaves to the Tatars, who in turn passed them on to Persians.

CHMIELNICKI'S TERRIBLE REBELLION

The most serious conflict waged by Poland with her rebellious Ukrainians was during an insurrection under Chmielnicki, in 1649. The massacres and cruelties perpetrated by the half-civilized hordes from the Ukraine were as barbarous as those of the American Indians during the onward march of the whites. The conditions existing here are vividly set forth by the famous Polish novelist, Henryk Sienkiewicz (who wrote many other splendid books besides "Quo Vadis," for which he is best known among Americans), in his novels covering different periods in Polish history.

Upon the failure of his rebellion Chmielnicki offered the annexation of Little Russia to Moscow. This offer was accepted in 1653, when it came under "the suzerainty of that growing empire." Always striving for complete independence, the Ukraine was never quite able to achieve it. Two wars with Poland resulted from that action.

It was more than a century after its incorporation before the entire province was brought into complete subjection by the developing Russian Empire. The "hetman" was maintained for some time; but this office was abolished by the vigorous Catherine the Great, and under her it became an integral part of the Empire.

The Ukraine's experiences with war and disaster would long ago have broken the spirit of a race gifted with less elastic temperament. There are elements in his temperament that enable him to stand much oppression without revolt. This characteristic may help the German in his attempts to make the Ukraine a subject nation.

Photograph by Nevin O. Winter

A MARKET SCENE IN KHARKOV: RUSSIA

Kharkov is the leading commercial city of the real Ukraine, for Odessa does not properly belong to the Little Russians, although it is now included in the bounds of the subject nation which Germany is trying to establish. Before the war, Kharkov was the administrative center of the great iron industry and coal mines of South Russia.

The Little Russians have worked hard and fought hard, and they have emerged a fairly united and still vigorous people. The population increases more steadily than that of Great Russia, as the people are greatly attached to home and do not care to wander far from their native villages. They are great lovers of the soil and cling to it with a passionate tenacity.

EXTENT OF THE UKRAINE

The Ukraine includes southeastern Russia, with the exception of the province known as Bessarabia, which partakes of the character of the Balkan States and is peopled with Roumanians and Bulgarians. The great seaport of Odessa and surrounding country have been added to it under the new alignment.

The Ukraine does not reach much north of Kiev or east of Kharkov, but it is a large State in itself, about as large as the German Empire, with some twenty-five or thirty millions of people living in it.

The largest city of the real Ukraine is Kiev, around which national life probably centers because of the deep religious associations in connection with the shrines and many holy places. It was at one time the capital of all Russia. Kharkov is the leading commercial town in it, unless Odessa, on the Black Sea, is considered.

About four million Ukrainians live in Austria, in the province of Galicia, and are there known as Ruthenians. They are exactly the same type of people as the majority of those living in the Ukraine and would be classed with them ethnographically.

THE LURE OF THE STEPPES

There is a lure about the limitless stretches of the steppes in the Ukraine.

Photograph by Nevin O. Winter

A GROUP OF PEASANT WOMEN ON A RELIGIOUS PILGRIMAGE TO KIEV

The Holy City of the Ukraine is visited annually by hundreds of thousands of pilgrims. It is the Jerusalem of the Little Russians. The catacombs, where repose the bodies of saintly recluses, are among Kiev's most sacred places, and here the pious ones kiss the shriveled hands laid out as hallowed relics by the monks. Contagion frequently spreads as a result of this practice.

In wide, level spaces, or in gentle undulations, they reach out until sky and horizon meet in a barely perceptible line. Parts of it remind one very much of our own western prairies. In spring and summer it is an ocean of verdure, with the varied shades of green of the growing vegetation interspersed with flowers of many hues; later, in the autumn, after the crops are harvested, it becomes a brown waste of stubble and burned-up pastures; in winter it is a white, glistening expanse of snow.

The unending forest land of the north has disappeared—not suddenly, but by degrees. Most of it is treeless, however, and a feeling of sadness and almost depression involuntarily creeps upon one as he travels over the steppes for the first time.

There are not many old towns in the Ukraine. Except in Kiev and Kharkov, one will hardly find a building more than a hundred years old. No old medieval churches built up by the toil of generations of devout hands, no old chateaux of the nobility, no palaces rich in pictures, will be encountered. The great majority of the towns are still big, overgrown villages.

The towns are separated from each other by enormous distances, with imperfect communication. The peasants plant their villages in the lee of some swell in the surface or by the edge of a stream in which they can water their flocks during the drought which may come.

WINDMILLS EVERYWHERE

The villages stretch down little valleys seemingly for miles instead of being compact, as in most countries. The only con-

Photograph by Nevin O. Winter

PEASANT GIRLS OF KHARKOV: LITTLE RUSSIA

While the Kharkov district of Russia has developed greatly as a manufacturing and industrial center in recent years, the chief occupation of the population is agriculture. The breeding of sheep, cattle, and horses is also an important activity, and at the four great fairs held annually in Kharkov, before the war, thousands of horses were bought and sold.

spicuous feature will be a church or two and the many windmills on the horizon.

Windmills are exceedingly common and dot the landscape on every hillside. Some will be still, while others, with their broad, far-reaching arms, furiously beat the air that blows over the steppes. Silvery gray they appear from age, as all are built of wood, and they are usually unpainted. Many of them seem ready to fall to pieces from age.

DIFFERENCES BETWEEN THE UKRAINIAN AND THE GREAT RUSSIAN

The general use of windmills is due not so much to lack of water, for they will be found near streams, but the flatness of the country does not give enough fall to allow the use of water-power. They are used to grind grain, and the farmers may be seen bringing their domestic grists to them, as they did to the pioneer water-mills in our own country. In many ways can the dissemblances of the Ukrainians with their former Muscovite compatriots of the north and east be traced. They speak a dialect which varies considerably from that spoken to the north and northeast of them. Their language is said to be nearer the old Slavonic than that of the Great Russians.

The people are handsomer than the Great Russians. Better nourishment probably has something to do with this, or the natural distinction between a northern and southern people, but the admixture with other races has also left its trace. They are, in general, taller and more robust.

The natural brightness and vivacity of the Slav temperament, which one will also find exemplified in the Pole, has not been dimmed by the infusion of the more stolid and melancholic Finnish blood, as

Photograph by Nevin O. Winter

A STREET SCENE IN ODESSA, THE CITY CREATED BY CATHERINE THE GREAT AS A STEPPING STONE TOWARD CONSTANTINOPLE

With wide and well-paved streets, many of them bordered with trees, Odessa is one of the most beautiful as well as one of the greatest commercial cities of Russia. Situated on the shores of the Black Sea, 20 miles north of the mouth of the river Dniester, it has a population slightly larger than Baltimore. Before the war, the value of its exports averaged more than eighty million rubles annually. With Bucharest it shared the questionable distinction of being one of the gayest cities of Europe.

is the case with the Great Russian. They have a buoyancy of temperament which leads to a light-hearted gaiety of spirits, such as one does not find among the Muscovites.

THE HOME OF RUSSIAN FOLK-LORE

In so far as outside influences have affected the Slav temperament in the Ukraine, it has been that of the Greek and the Tatar. The warm and bright colors of their costumes are somewhat reminiscent of the Orient. They are great lovers of beads, of which they will wear many strings, and the national costume of the women includes a wreath of flowers worn on the head.

A vein of romance and poetry runs through the Little Russians. It may not be very deep, but it is wide-spread. It is the home of Russian folk-lore. Lyrical ballad and improvised ballad still spring almost spontaneously from the lips of the peasants. Their nature is rather poetical and they are very musical. The love songs of Little Russia are distinguished by their great tenderness. They have songs for all occasions, sacred and profane. They are also great lovers of flowers.

BRILLIANT COLORS MAKE NATIVE COSTUMES A DELIGHT TO THE EYE

The lover of peasant costumes will be in his glory here in the Ukraine. Nowhere in Russia is there so much color in costumes as here, and the general effect is extremely pleasing. The market in Kiev or Kharkov is a study in color.

Red is the prevailing color among the

Photograph by Nevin O. Winter

A RUSSIAN PEASANT GIRL SPINNING: UKRAINE

The women of the Ukraine are especially fond of bright colors, and one of the features of the native costume is the necklace of varihued beads. The industrial development of the Ukraine region has provided a cheap method of producing cloth, so that the home spinning-wheel and the loom gradually began to disappear a decade or more ago.

women, but there are many other bright bits. The costume is also extremely artistic. The red turbans of the women have embroidered borders and their skirts also have a border which reaches almost to the knee. The women generally wear their skirts rather short, scarcely reaching to the ankles—a style becoming more and more popular the world over today. The blouses are made out of pretty patterns, with unique and original designs worked into the material. Even the heavy coats, which they wear for warmth, have their own design, and all will follow practically the same pattern.

Even the men have their little vanity, having their shirts embroidered in red and blue designs, and the younger men have quite a dandified look.

GO BAREFOOTED TO SAVE THEIR BOOTS

Both sexes wear coarse boots, many of them being made of plaited leather, if they are able to purchase them. In summer many will come to the city barefooted, for in that way they save their boots; and leather boots, even in peace times, cost many rubles. In war times they are beyond the reach of the ordinary peasant.

On festive occasions many of the young women are wonderful to behold. They don highly colored dresses and have long bright pink, blue, and red ribbons tied in their hair, which stream behind them as they walk. Oftentimes they wear garlands of real or artificial flowers. Several strings of large and small coral or glass beads complete this pretty outfit; and many of the maidens, with their gypsy-like complexions, look very charming when attired in this manner.

These people have a great love for vivid colors in everything and even decorate their rooms with striped or checked red and white towels. The icon (holy image) shelf is sure to be decorated with these fancy towels and paper flowers. A guest of honor would be given a seat under this little domestic shrine.

KHARKOV, THE SECOND CITY

Kharkov is the second city of the Ukraine and is almost two-thirds the size of Kiev. Its long, broad, and dusty streets, rather roughly paved, are flanked by houses of a nondescript architecture. They are usually two stories high and in colors red, yellow, blue, and magenta stucco predominate.

Huge signboards prevail everywhere in the business section on the stores with samples of the goods sold therein painted upon them. The peasant who cannot read can understand the pictures at least.

The glittering domes of a number of large, flamboyant Orthodox churches give a semi-oriental general effect.

Kharkov's importance is due to the fact that it is the center of a large agricultural district, one of the most fertile sections in all Russia.

There is a very large bazaar here, which draws thousands of visitors on several occasions during the year. It is a great distributing center for agricultural supplies and is also quite an educational center, with one of the greatest universities in all Russia.

ODESSA, CATHERINE THE GREAT'S CREATION

By the new alignment Odessa and the province of Kherson have been added to the Ukrainian Republic. This city of half a million is one of the newest cities in Europe. While Moscow can boast of a thousand years of history, Odessa is only a little over a hundred years of age. Its rapid growth will compare with the cities of the new world. It dates from 1794 and it owes its existence to Catherine the Great. Just a few years before that this territory had been ceded to Russia by Turkey. Her purpose was to establish a strong city as near to Constantinople as possible. A magnificent statue of the empress, representing her as trampling the Turkish flag scornfully beneath her feet, now adorns one square.

Odessa is not a typical Russian city. Mark Twain said that the only thing truly Russian about it was the shape of the droshkis and the dress of the drivers. One might add the gilded domes of a few churches. It is an attractive city in many ways and it has the reputation of being a very fast city. It has been in recent years a very important post.

The business of the city is largely in the hands of the Jews, who comprise a third of the population. There has not

A TYPICAL VILLAGE PRIEST: RUSSIA

What the attitude of the Ukrainian Government will be in matters of religion is as yet conjectural. The revolutionary movement throughout Russia as a whole has been anti-clerical. The Russian peasant, however, is innately devout.

Photographs by Nevin O. Winter

THE GREAT STACKS OF STRAW LEFT AFTER THRESHING: UKRAINE

It was the vast, grass-covered steppes which first attracted the roving Cossacks to the Ukraine. These same steppes, when put under cultivation, yield bountiful harvests of wheat. It was on Ukrainian grain that Germany expected to feed her millions after the treacherous treaty of Brest-Litovsk, which was designed to dismember the Russian Empire and leave it helpless in the hands of the despoilers.

Photograph by Nevin O. Winter

A GROUP OF RUSSIAN FORESTERS

In centuries past there were magnificent forests of vast extent in the northern section of the Ukraine, but the trees have gradually disappeared. Reforestation is one of the obligations resting upon this people when peace again comes to them.

been the best of feeling toward them by the Orthodox population and a terrible massacre occurred in 1905. It has always been a stirring revolutionary center and has caused the imperial government much trouble in the past quarter of a century.

KIEV, THE HOLY CITY OF THE UKRAINE

Kiev is the holy city of the Ukraine and hundreds of thousands of pilgrims visit it each year. The natural landscape is heightened at all times in its pictorial effect by the picturesque groups of pilgrims, staves in hands and wallets on backs, who may be seen clambering up the hills, resting under the shadow of a hill, or reverently bowing the head at the sound of a convent bell.

Here is the story as it is recently related by Russian chroniclers. A thousand years ago, or thereabouts, a very holy monk, named Anthony, came to

A PEASANT HOUSE IN THE UKRAINE: RUSSIA

The villages of the Ukraine do not cluster about some feudal château or nobleman's castle, as in many of the other countries of Europe; they are usually planted in the lee of some swell in the surface of the steppes, or beside a stream where the flocks of the peasants may find water in the dry season.

Photographs by Nevin O. Winter

HARVEST TIME IN THE UKRAINE

The characteristic big wooden yoke and low-hung shafts identify this vehicle at once as Russian. The undulating plains of the Ukraine, once a pasture-land only, now yield bountiful crops of grain.

Photograph by Nevin O. Winter

UKRAINIAN PEASANT WOMEN IN THE STREETS OF KHARKOV: RUSSIA

In summertime these countrywomen come to the city barefooted in order to save shoe leather, which is very expensive in a land that annually exports hundreds of thousands of hides in times of peace.

Kiev and dug a cell for himself in the hill. The devout life of this monk soon drew other holy men around him, and all at first made their homes in the caves. It is said that many of the early monks never again emerged into daylight after they once entered the caves. Some shut themselves up in niches and remained self-immured the rest of their days, living on the food placed there each day by their brothers. When the food remained untouched, the monks knew that a saintly spirit had fled. The place was then walled in, and the niche remained the monk's home after as well as before his dissolution.

KIEV'S GHASTLY CATACOMBS

The catacombs are indeed ghastly to visit, for there are rows upon rows of skulls in them. Access is had by narrow steps, and then through labyrinthine subterranean passages one descends deeper and deeper into the bowels of the earth, winding hither and thither along a pathway. Finally there begins a series of niches, in which repose the bodies of the saintly recluses.

The pilgrims pass each holy tomb, reverently kissing the shriveled hands laid out by the monks for that purpose. They do not distinguish between the holy and the holier, but pay a tribute to each one impartially in order to conciliate all.

Much contagion must be spread by this unsanitary method of homage. No doubt many an infection, and possibly even a great pestilence, could be traced directly to this spot, where the indiscriminate osculation of church relics is observed.

ICON RECEIVES 100,000 KISSES A YEAR

The Cave Monastery, or Pechersky Lavra, is a large stone structure on the hill, at a little distance from the city, and is surrounded by a high stone wall. It is

Photograph by Nevin O. Winter

AN OLD WINDMILL OUT ON THE STEPPE: UKRAINE

The windmill is a landscape feature as characteristic of the Ukraine as of Holland; but the mills of this region are not nearly so picturesque as those kept in perfect repair by the thrifty Dutch. Many of the Ukrainian structures seem ready to fall to pieces, and they are seldom painted. Their mission is to grind the grain in a country which is so flat that there is no such thing as water-power.

entered through a holy gate. Each monk has his own apartment, with a little garden attached. Several hundred monks live in the monastery and a number of lay brethren are also allowed to dwell there.

In the principal church is preserved a miracle-working icon, known as the Death of Our Lady. It was brought from Constantinople and has received no fewer than a hundred thousand kisses a year. It is painted on cypress wood, now black with age. Every line of the picture is marked by precious stones and each head has a halo of brilliants, while an enormous diamond glitters above the head of Christ.

The wealth of the Lavra at Kiev is

Photograph by Nevin O. Winter

A LANDLORD CROWNING RUTHENIAN PEASANT GIRLS IN A HARVEST CEREMONY

The four million Ukrainians who live in the province of Galicia, under Austrian sway, are called Ruthenians

enormous. Each successive Czar has visited it not infrequently and always gave a large donation.

What the attitude of the new leaders of the Ukraine toward this monastery will be remains to be seen. The revolutionary movement as a whole has been anti-clerical and shows a revolt against the former influence of the church in Russia.

The monks do not live the ascetic lives of their ancestors, although the food still seems plain. Coarse bread is always served, fish frequently, but meat and wine are not unseldom. One monk always reads from the lives of saints while the others eat. The monks seat themselves on benches and they eat off pewter platters. There is an inn at which many stop who can pay, but the fare is too plain for most people. Then there is also a free lodging quarter, where the poorer ones

Photograph by Nevin O. Winter

PILGRIMS ON THEIR WAY TO KIEV, THE HOLY CITY OF THE UKRAINE

According to legend, Kiev is "the mother of all the towns of Russia." It was the capital of St. Vladimir, who, in the year 988, established the Greek church as the State religion. A monument to this ruler was erected in the city in 1853, representing him baptising the Russian people. Kiev has been a religious center since his day.

can stop without charge. Sour black bread and boiled buckwheat groats is about the only food provided for this class of pilgrims.

PILGRIMS SHARE THEIR FLEAS WITH ALL

Many peasants will travel on foot for days and spend almost their last kopeck for the sake of visiting this sacred monastery in the holy city of Kiev. Sienkiewicz makes one of his principal characters say when faced with danger: "I shall die and all my fleas with me." These pilgrims certainly bring theirs with them to Kiev and share them freely with any one with whom they come in contact.

It would be difficult to find a larger or more varied collection of professional or casual mendicants anywhere than congregate here at Kiev during the pilgrimage period. Dressed in rags and wretchedness, these mendicants expose revolting sores and horrible deformities in order to excite sympathy. Some appear to enjoy vested rights in particular locations. Many might be classed as pious beggars and have an almost apostolic appearance, with their long beards and quiet bearing. All of them may be worthy objects of charity, but the Russian beggars are most importunate.

RUSSIAN PEASANTS EXTREMELY CHARITABLE

The Russians themselves are very charitable toward the unfortunate class. Poor peasants, themselves clothed in rags, will share their little with those poorer than themselves.

A foreigner, knowing the poverty of the people and the inadequacy of public relief, cannot but feel kindly disposed toward those who are really helpless. Here, as elsewhere, however, it is difficult to distinguish between the unworthy and the deserving.

THE ACORN, A POSSIBLY NEGLECTED SOURCE OF FOOD

By C. Hart Merriam

Formerly Chief of the U. S. Biological Survey

IN VIEW of the present pressure on the food supply of the United States, and with special reference to the universal effort to reduce the consumption of wheat by the substitution of corn meal, bran, and other cereal products, it may be worth while to call attention to the high nutritive value of a wholly neglected food of wide distribution. I refer to the acorn.

There are in the United States more than 50 species of oaks, of which 30 occur in the Eastern States and about 15 in the single State of California.

To the native Indians of that State the acorn is, and always has been, the staff of life, furnishing the material for their daily mush and bread. And when it is remembered that the Indian population of California at the time of its discovery numbered probably not less than 300,000 persons, and that from the Oregon boundary to the Mexican line, except in the desert region, where oaks do not grow, acorns were universally eaten, and in most cases were the principal article of diet, some idea may be had of the vast quantity and high food value of those annually consumed.

In the fall, when the acorns are ripe, the Indians gather them and spread them out to dry in the sun, and when thoroughly dried store them in large baskets and wickerwork caches, sometimes in trees, but usually on rocks or poles.

These receptacles are built to shed the rain and to keep out rats and mice, but are sufficiently open to permit the circulation of air, thus avoiding the danger of molding.

Another and very different way of preserving acorns, practiced by the Wintoon Indians of western Tehama County, in California, was described to me by F. B. Washington, of Oakland. The acorns were buried in boggy places near cold springs, where they became swollen and softened and turned nearly black in color, but remained fresh for years. When needed they were dug out and *roasted*, never dried or pounded for flour, the mush and bread being always made of dried acorns.

White men in plowing have opened up caches of acorns that had lain in these cold, boggy places for fully 30 years, and found the acorns black, but still good.

When preserved dry in the usual way, the acorns are shucked as needed, and the dry meats, each splitting naturally in two parts, are pounded in stone mortars until reduced to a fine meal or flour. This at first is disagreeably bitter, but the bitter element is removed by leaching with warm water, which in seeping through acquires the color of coffee and the bitterness of quinine. The meal is then dried and stored to be used as required, for mush or bread.

According to V. K. Chesnut, the Indians of Round Valley, California, sometimes practice another method of getting rid of the bitter element, namely, by burying the acorns with grass, ashes, and charcoal in a sandy place and afterward soaking them in water from time to time until they become sweet.

BOILED IN BASKETS BY USE OF HOT STONES

The ordinary method of cooking is by boiling in baskets by means of hot stones, the result being a thick jelly-like mush or porridge. Acorn flour makes a rich, glutinous food and contains a surprisingly large quantity (18 to 25 per cent) of nut oil of obvious nutritive value.

Mrs. Merriam tells me that it is easy to work, being what cooks call a "good binder," which means that it holds together well even when mixed with several times its bulk of corn meal or other coarse or granular materials.

Mush and bread made wholly of acorn flour are not pleasing to our taste, but

Photograph by C. Hart Merriam

INDIAN WOMAN OF THE CHUKCHANSY TRIBE, NEAR FRESNO FLAT, CALIFORNIA, SHUCKING ACORNS

Note the newly gathered acorns of the black oak in the carrying basket, the flat stone upon which the acorn is poised, and the small stone in the right hand with which it is split. The picture shows also one of the flat, circular winnowing baskets in which the acorn meal is agitated to separate the fine from the coarse, and a bowl-shaped basket in which the acorn mush is cooked. The work is done in a small opening in the manzanita bushes adjacent to the Indian's home.

leached acorn meal mixed with corn meal in the proportion of one part acorn to four parts corn makes excellent corn bread and pones, and mixed with white flour or whole-wheat flour in the same proportion makes palatable bread and muffins, adding to the cereal value the value of a fat nut product.

I have often eaten the pure acorn mush and bread as made by the Indians, but prefer the mixed product above mentioned. John Muir, during his arduous tramps in the mountains of California, often carried the hard, dry acorn bread of the Indians and deemed it the most compact and strength-giving food he had ever used.

Another kind of bread was made by the Indians of Sacramento Valley. The eminent geologist, James D. Dana, who traversed the valley with the Wilkes Expedition in 1841, said: "Throughout the Sacramento plains the Indians live mostly on a kind of bread or cake made of acorns . . . kneaded into a loaf about two inches thick, and baked. It has a black color, and a consistency like that of cheese, but a little softer; the taste, though not very pleasing, is not positively disagreeable."

Chesnut tells us that this kind of bread usually contains a red clay which is mixed with the dough before baking, in the proportion of one part clay to 20 of acorn dough. It is then embedded in leaves and baked overnight on hot stones, either in the cooking hole in the ground or covered with earth and hot stones.

"When removed the next morning the bread, if previously mixed with clay, is as

Photograph by H. W. Henshaw, from C. Hart Merriam

DIGÉNO INDIAN WOMAN POUNDING ACORNS AT SANTA ISABEL, SOUTHERN CALIFORNIA

The picture shows plainly the ring of partly ground acorns which always rises about the rims of these mortar holes in the solid rock. It shows also the method of holding the heavy stone pestle, and some of the acorn baskets.

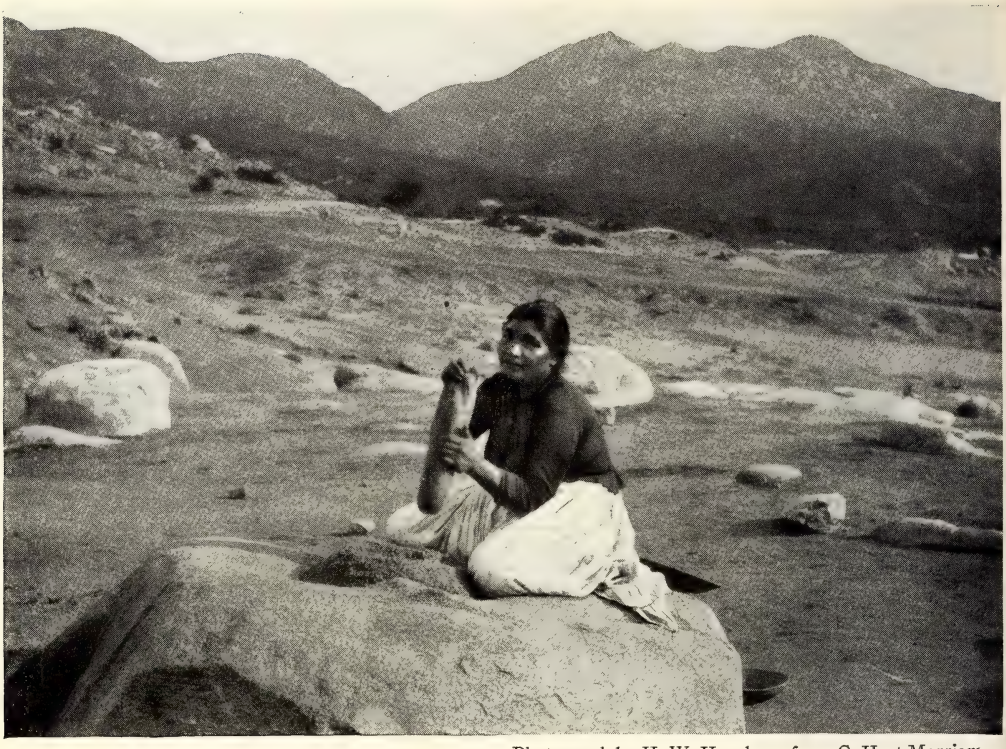
black as jet, and while still fresh has the consistency of rather soft cheese. In the course of a few days it becomes hard. . . . It is remarkable for being sweet, for the original meal, and even the soup, are rather insipid. The sweet taste is very evident, and is due in great measure to the prolonged and gentle cooking, which, favored by the moisture of the dough, gradually converts some constituent of the meal into sugar."

Chesnut adds that the clay really serves a useful purpose, converting any tannin still remaining in the dough into an insoluble form, thus removing the indigestible element. He states further that bread made in the same way, but without the clay, is likewise sweet, differing only in color, the color varying from light tan to dark reddish brown.

The quantity of acorn meal cooked and eaten by Indians is almost beyond belief. At a ceremony for the dead, held near Bald Rock, Tuolumne County, California, in early October, 1907, the preparation of the acorn food for the mourners and guests was begun several days in advance. Two cooking places and five leaches, each about 4 feet in diameter, were in active operation for several days.

On the opening day I counted at the cooking places about 50 huge baskets, each holding from one to two bushels, full of freshly cooked acorn mush (*nup'-pah*). The mush is so heavy that the services of two strong women were required to lift each basket and place it in the large conical burden basket on the back of a third woman, who slowly carried it to the roundhouse where the ceremony was held.

In addition to the mush, there were at least 50 turtle-shaped loaves of acorn bread (*oo-laý*), made by dipping out the



Photograph by H. W. Henshaw, from C. Hart Merriam

INDIAN WOMAN POUNDING ACORNS AT AGUA CALIENTA, IN WARNER VALLEY, SOUTHERN CALIFORNIA

Note the elevated rim of partly ground acorn meats surrounding the mortar hole

hot mush in a special basket and plunging it (turning it out of the basket) into a cold, running stream.

The action of the cold water, curiously enough, causes the loaves to contract and harden They are then placed on rocks to drain, and in the course of a few days become dry and hard and may be carried for weeks, until consumed.

The total quantity of acorn mush and bread made for this ceremony must have exceeded a ton in weight.

In some parts of California the Indians husk the acorns as soon as ripe, without waiting for them to dry. The shells, being at that time somewhat flexible, cannot be easily cracked with the cracking stone, but are torn open with the teeth.

INDIANS ESTABLISH ACORN CAMPS IN AUTUMN

A very intelligent full-blood woman named Che-na-wah Weitch-ah-wah, belonging to the *Po-lik-lah* or lower Klamath tribe, writes that in her country when the acorns ripen, in late October and in November, the families establish acorn camps in favorite localities, gathering and bringing in the nuts in the large burden baskets. In the evening, when the evening meal is finished, all the family—men, women, and children—engage in removing the hulls with their teeth, an occupation at which they are very expert. The hulled green acorns are put into large, flattish circular receptacles of basket work, which are placed on top of a high frame over the fire in the house, so that the heat in rising dries them.

All acorns are not equally desirable from the food standpoint. Of the edible qualities of the numerous eastern species I have no personal knowledge, though it is well known that acorns of several species were eaten by various eastern tribes from Canada to the Gulf of Mexico.

It is known that the Algonkin tribes

of our Eastern States used acorns for bread and for oil, and mixed boiled acorns with their fish and meat.

The Iroquois of the State of New York, according to F. W. Waugh, commonly made use of acorns for food, apparently favoring the sweet kinds, as those of the white and chestnut oaks, but in times of necessity resorted to the bitter acorns of the black and red species.

Waugh states further that nut meats (presumably including acorns) were pounded, boiled slowly in water, and the oil skimmed off into a bowl; the oil was boiled again and seasoned with salt, to be used with bread, potatoes, pumpkins, squashes, and other foods, and nut oil was often added to mush. The meats left after skimming off the oil were seasoned and mixed with mashed potatoes, and nut meats were crushed and added to hominy and corn soup to make it rich.

Photograph by C. Hart Merriam

ANCIENT ACORN MORTAR HOLES AND PESTLES IN SOLID GRANITE, NEAR KAWEAH RIVER, CALIFORNIA

These ancient grinding mills in hard granite rock are common on the middle and lower slopes of the Sierra Nevada of California and some of them have as many as 20 or 30 mortar holes. The pestles are large and heavy with smoothly rounded striking ends and are held in both hands; the *modus operandi* is illustrated on pages 131 and 132. When pounding the acorns, several women usually work together, sitting at neighboring holes and singing in rhythm with the strokes of the pestles.

And the Hurons of eastern Canada, according to the Jesuit Relations, prepared the acorns by "first boiling them in a lye made from ashes, in order to take from them their excessive bitterness." Another way was by boiling them in several waters.

During the famine winter of 1649-1650, after the Hurons, defeated by the Iroquois, had taken refuge on the Island of Saint Joseph, at the north end of Lake Huron, the Jesuits of the Mission at that place "were compelled to behold dying skeletons ekeing out a miserable life; . . . the acorn was to them for the most part what the choicest viands are in France."

The Jesuits, before the snow had covered the ground, had bought 500 or 600 bushels of acorns, and had dispatched several canoes to procure a supply of fish from the Algonkin tribes 60 to 100

Photograph by C. Hart Merriam

OPEN-AIR KITCHEN, WHERE THE ACORN MEAL IS LEACHED AND COOKED

Beyond the leach is the fire, covered with stones which are being heated to cook the mush in the baskets on the left. The leach is a low, concave mound of dry debris gathered under the manzanita and lilac bushes, consisting mainly of dead and broken leaves and bark, which together form a porous bedding through which the water easily finds its way. The leach is lined with a fiber mat, or cloth, and the branch of an evergreen tree is laid on the meal to catch and spread the water so that it will not dig into the meal. Used by the Mewuk Indians of the Sierra foothills region, California.

leagues away. But the quantity of food obtained proved insufficient, and early in March the famished Hurons were compelled "to go in search of acorns on the summits of mountains which were divesting themselves of their snow." These poor Indians were drowned by the sudden breaking up of the ice on the lake (Jesuit Relations).

USE OF ACORNS IN SOUTHERN STATES

The Choctaw, of Louisiana, according to David Bushnell, used to make flour by pounding the acorns of the water oak in a wooden mortar, when the meal was leached, by putting it into an openwork basket and pouring water through several times. It was then boiled or used as corn meal.

In the Southern States, where more than 20 species of oaks occur, and in parts of Mexico, acorns are sometimes eaten by the people, and they are relied upon to supply the principal food of the countless thousands of hogs that roam at will through the glades and forests, thus contributing materially, albeit indirectly, to the support of the population.

And there is every reason to believe that a fair proportion of the species might be utilized with advantage to vary or supplement the daily diet of the people. This would be especially desirable in the case of the ill-nourished poorer classes—those subject to the inroads of hook-worm and pellagra.

In California the relative merits of the different kinds are well known. At middle elevations in the interior of the State the fruit of the black oak is the favorite, while in the humid coast belt that of the tanbark oak is most prized. Besides

Photograph by C. Hart Merriam

ANOTHER TYPE OF LEACH, MADE BY THE WUKSACHE INDIANS OF ESHOM VALLEY

This leach consists largely of sand placed on a bed of dry, dead leaves and twigs supported on a square framework of poles. The looped stick resting against the leach is used for stirring the hot stones in the basket while the cooking is going on.

these, the fat acorns of the blue oak of the dry foothills and the elongate ones of the valley oak of the bottomlands and adjacent slopes are gathered and consumed in large quantities; and in years when the nut crop of the favorite species fails, most, if not all, of the others are turned to account.

Even at the present time hundreds of bushels of acorns are annually gathered and eaten by California Indians; but the quantity consumed by the white population is negligible, the main part of the crop (amounting to thousands of bushels) being devoured by hogs, bear, deer, squirrels, and other animals or allowed to go to waste on the ground.

ACORNS AS A BREAD SUBSTITUTE IN EUROPE

In the old world the utilization of acorn food for man and beast dates from

Photograph by H. W. Henshaw, from C. Hart Merriam

POMO INDIANS SHUCKING AND DRYING ACORNS, NEAR UKIAH, IN RUSSIAN RIVER VALLEY, CALIFORNIA

The split meats may be seen spread out to dry on cloths on the ground and also on an elevated platform alongside the house. One of the large carrying baskets in which the acorns are gathered stands near the door.

very ancient times, and notwithstanding the importance of the wood for timber and fuel, and of the bark for tanning, acorn mast was long considered the most valuable product of the oak forests.

In England, France, and Italy, during periods of food scarcity, boiled acorns were used as a substitute for bread; and in most of the Mediterranean countries the sweet fruit of *Quercus esculenta* (mind the name) is still prized by the inhabitants. In Algeria and Morocco the large acorns of an evergreen oak are eaten both raw and roasted, while in Spain those of the Gramont oak are regarded as even superior to chestnuts.

V. K. Chesnut quotes Giovanni Memmo to the effect that in Spain and Italy sometimes as much as 20 per cent of the total food of the poorer people consists of sweet acorns. But as the indigestible tannin is not removed, it has been found that 10 per cent of the acorns pass away undigested. The superiority of the methods employed by our Indians is obvious.

That a food of such genuine worth should be disregarded by our people is one of many illustrations of the reluctance of the white man to avail himself of sources of subsistence long utilized by the aborigines.

We seem to prefer crops that require laborious preparation of the soil, followed by costly planting and cultivation, rather than those provided without price by bountiful nature.

COMPARATIVE ANALYSES OF CORN MEAL, WHEAT FLOUR, AND ACORN FLOUR [1]

	Corn meal	Wheat flour	Acorn flour [2]	
			Leached	Unleached
Water	12.5	11.5	11.34	5.82
Ash	1.0	.5	.29	1.90
Fat	1.9	1.0	19.81	25.31
Protein	9.2	11.4	4.48	5.44
Carbohydrates	74.4	75.4	62.02	59.62
Fiber	1.0	.2	2.06	1.91

Photograph by C. Hart Merriam

ACORN CACHES IN YOSEMITE VALLEY

The outer covering is of branches of fir, cedar, and pine, closely appressed, with the tips directed downward to keep out the rain and the native rats, mice, and squirrels. The interior lining is mainly of the long, slender branches of *Hosakia* or *Lotus*.

While on the subject of Indian foods, it may be mentioned that the nutritious nuts of the sugar pine and digger pine and the berries of certain species of manzanita are much used by California Indians; that the seeds, roots, and fruits of numerous other plants form valued additions to the diet, and that in times of scarcity the nuts of the California laurel and buckeye, of which hundreds of bushels may be had, are so treated as to be edible.

In the arid mountains of the desert region east of the Sierra the rich oily nut of the pinyon or nut pine takes the place of the acorn as the dominant element of the food supply; and in certain canyons bordering the Colorado desert the same may be said of the native date, while in the open deserts the mesquite bean is the staple commodity.

[1] For these tables I am indebted to the U. S. Food Administration. The analysis of acorn flour was kindly made by Dr. J. A. Le Clerc, of the Bureau of Chemistry, U. S. Dept. of Agriculture.

[2] This acorn flour was made from the California black oak (*Quercus californica*) and is very old, having been obtained by me from the Mewuk Indians at Oleta, in the middle Sierra foothills, 12 years ago. As a result it is exceedingly dry and without doubt has lost much of its protein. An interesting comparison may be made with an analysis, by Charles D. Woods, of acorn flour from the California Valley white oak (*Quercus lobata*), which yielded: Water, 8.7; ash, 2.0; fat, 18.6; protein, 5.7; carbohydrates, 65.0. This meal (unleached) contained 6.63 per cent of tannin. The large percentage of fat in both kinds shows their extraordinary richness in nut oil and consequent high fuel value.

Photograph from Alice Rohe

THE MORNING CALL OF THE MILKMAID IN SAN MARINO

Early each day, peasant girls climb Monte Titano from the sloping farms below, carrying woven baskets of straw in which are packed bottles of milk. When the price of milk reached 50 centimes (10 cents) a quart recently there was a national scandal.

OUR LITTLEST ALLY

By Alice Rohe

RISING sheer and majestic from the plains of Romagna, an imposing mountain dominates the landscape from Rimini to the distant rolling hills and peaks of the Apennines.

Atop this great rock, whose serrated flanks and menacing heights seem inaccessible, three towers soar in picturesque silhouette against the sky-line.

The nearer approach over ever-upward roads, ascending from the Adriatic toward this giant mount, brings increasing doubt as to its accessibility.

It is Mount Titanus, and the towers piercing the blue sky are the famous "Penne" of San Marino, the littlest Republic in the world, the land of perpetual liberty, of hereditary peace.

An eminence well worth the struggle to reach in these war-tortured times!

Austrian dirigibles soar above Rimini, its nearest railway connection, 13 miles away, dropping their destructive bombs; but the Land of Peace stands calm and unafraid, wrapped in the undisturbed autonomy of sixteen centuries.

The entire landscape to south and west is marked by mounts and peaks capped with medieval towers, bringing to mind those illustrated fairy tales of childhood, with their deeds of wickedness and chivalry. Legends and fairy tales indeed are interwoven in this marvelous panorama; but history, too—history of violent and bloody warfare — rises phantom - like about those warning heights. They are the towers of the Malatesta, and from Rimini, past Verruchio, where these tyrants first established their lordship, to right and left of the river Marecchia, their story is written before San Marino.

THE MOUNTAIN OF THE TITANS

But long before the Malatesta began their cruel sway, Mount Titanus had its place in the dawn of story, for it is no other than that famed mountain of mythology which the angry Titans raised in their efforts to reach Jove and drive him from his throne.

Having left Rimini, with its stern reminders of war in air and sea, its sandbagged cathedral, temple of Sigismondo Malatesta, miles behind, the country of peace becomes an inspiring goal.

The frontier is crossed with scant formality. Serravalle, largest of the castelli, or towns, of the Republic, first stop on San Marino soil, is passed, and the Borgo, nestling at the foot of the foreboding-looking mountain, shows quaintly narrow streets and arched loggias, as the courageous auto plunges determinedly up that precipitous drive.

At last it stops before an ancient gateway, where all passengers must descend. Then through its massive arch, up a steep, narrow street, the way leads with many turns, past little squares and market-place, to the cherished spot of the Sammarinesi, the Pianello, Piazza della Liberta, with its statue of Liberty in the center. Here is the government palace, modern edifice of fourteenth century architecture. Here are the postal and telegraph offices and the Tribunal. Doves, fitting symbols, flutter about the palace, descending to get their daily food from the natives; then flying away to rest beneath the statue of San Marino, standing guard over his Republic, from the palace angle. Before the wall, which seems to protect the promenaders from falling into the depths below, a view of unusual loveliness is unfolded.

A PANORAMA OF UNSURPASSED SPLENDOR

But it is from the "Rocca," the ancient fortress, still higher, ever higher, that a panorama of unsurpassed splendor is revealed—mountains and peaks, sea and plain, white ribbon-like roads winding through level and height toward distant parts. Ranges of mountains roll wave-like away into the horizon. Carpegna, cradle of the counts of Montefeltro, later dukes of Urbino, looms majestically. To the left a black streak against the horizon marks Ravenna's famed Pineta, or Pine Forest. Again one sees Rimini and

Photograph from Alice Rohe

EMPTYING WINE CASKS AT THE GATE OF SERRAVALE: SAN MARINO

As these splendid animals attest, stock-raising is the principal occupation of the Sammarinesi, but the cultivation of vineyards is a close second. Even the poorest peasant crushes his grapes and makes his wine.

the sea, and through the clear air the gaze crosses the Adriatic and discerns the faint outline of Dalmatia, the land from which came that pious stone-cutter, founder of the Republic, the land of liberty and peace—Marino.

But nearer at hand, so close that it seems as if one could almost call across, though it is six miles distant, the most compelling of all San Marino's mountainous neighbors holds the attention. It rises abruptly from the rolling hills, another seemingly inaccessible and impregnable rock, with a formidable fortress menacing the landscape from its precipitous height.

This is San Leo, whose history, interwoven in primitive times with that of San Marino, is of especial interest, in the light of the littlest Republic's diverging line of development. War and tyranny ever disturbed the inhabitants of San Leo, while peace and liberty blessed San Marino. Tradition says the reason was that the body of San Leo was removed from the country, while that of San Marino remained—a powerful and venerated relic. San Leo's grim fortress has been the scene of dark deeds during the successive political wars and the varied turbulent epochs of Italian history. Among its famous and infamous prisoners was Cagliostro, who died after six years of suffering, in solitary confinement.

ITALY HONORS THE LITTLE REPUBLIC IN ITS MIDST

It is on the highest point of the Republic, 2,500 feet above sea-level, looking from San Leo out over the scenes of violent history, that the story of San Marino becomes picturesquely vital. Battles and discords have rolled for centuries about its feet, war has engulfed it, even as today, and even as today it has maintained its independence, its liberty, its heritage of peace.

The position of San Marino, 13 miles from Rimini, is singular. This little Re-

Photograph from Alice Rohe

A VIEW OF SAN LEO FROM SAN MARINO

When Leo and Marino, Dalmatian stone-cutters, had completed their self-appointed task of caring for the spiritual and physical well-being of the Christian slaves who were reconstructing the walls of the city of Rimini, they sought peace and solitude on two neighboring heights now called San Leo and San Marino.

public, whose greatest length is 9 miles, is completely surrounded by Italy, who respects its autonomy, as have rulers of the past, with a few fleeting exceptions, since the pious Dalmatian stone-cutter left the mountain to his followers, "free from every other man."

Today is the time when the rights of little nations are commanding a good deal of the world's attention. Their claims before humanity have been forced by tyranny and the horrors of war. San Marino, littlest nation of them all, is of interest because of its very freedom, its persistent maintenance of its hereditary liberty.

The tradition of its safety, its internal peace, in contrast to San Leo, is ingenuously expressed in the ancient belief that whenever an evil and avaricious spirit, covetous of dominion, entered a citizen, that citizen, through some occult power, was disposed of. Disturbers of the public peace did not last long. Saint Marino, you see, watched over his Republic. Whatever be the reason for the perpetual peace, the veneration of the saint is boundless. Today, with the same sincerity and reverence as of old, the silver bust containing the head of Marino is carried throughout the Republic to bless it.

A REPUBLIC WHOSE IDEAL HAS BEEN MAINTAINED

That this little Republic, which today has 11,000 inhabitants and an area of 38 square miles, has maintained its independence, its ideal of liberty, in the midst of strife and bloodshed, of changing social conditions, for sixteen centuries, adds dignity to the unwavering belief of the trusting ones in the never-ceasing protection of the saintly founder.

The position of the mountain, far from the great Roman roads, the Via Flaminia and Via Æmilia; sufficiently distant from

the coast to be safe from maritime invasion; the stronghold impregnable to assault by medieval armies; the retiring and unostentatious, peace-seeking character of the inhabitants; the comparative poverty of the country—all contributed to San Marino's being left alone. But external reasons were not sufficient—there was an internal cause which existed in its institutions and its morality.

In the most disrupting centuries of Italian history San Marino had no factions, no strife between feudal lords and people, no domineering insolence of conquerors, no lost rights to vindicate. Instead, the people lived simply, changing their constitutions slowly, according to the needs of the times, always adopting changes which were best for the development and conservation of liberty.

In the life of the Republic today the influence of the Dalmatian saint is strongly reflected. For a country to maintain the characteristics of its primitive founder is a social phenomenon of which possibly San Marino alone can boast.

THE ARRIVAL OF MARINO AND LEO

During the days of Christian persecutions, in the middle of the fourth century, Marino and Leo, two stone-cutters of Arbe, Dalmatia, crossed the Adriatic and came to Rimini. Their reason, says tradition, was to aid Christians, condemned by pagan rulers, to reconstruct the walls of that city. Realizing that the labors of those who were compelled to hew the rocks from the mountains and transport them along the Marrechia to the mouth of the river were the most oppressive, they ascended the river and stopped before those two abruptly rising mountains, commanding sentinels of the landscape.

Their experience as stone-cutters soon placed them in charge of large numbers of slaves, to whom they brought not only material but spiritual help. Legends of those far-away days tell how both procured donkeys to aid them, and one day a bear devoured that of Marino. The saintly man immediately bridled and saddled the bear, and the wild beast submissively performed the labor of the donkey it had eaten!

The walls of Rimini having been finished, Leo and Marino looked longingly upon the solitude of the two mountains. As the hermits of the Thebaid, who flourished at this same period, they sought peace and solitude in those impenetrable heights. Hewing a bed from the rock and cultivating a little garden, Marino found all his material wants supplied. This rough bed and site of the garden are pointed out today by reverent peasants.

A few slaves followed their former overseers in order to practice, undisturbed, their Christian faith. Leo and Marino, overthrowing all pagan idols, each built a little church. Fine remains of the Roman temple of Jove, once dominating the height of San Leo, are seen in the columns of the cathedral and La Pieve today, while small bits of sculpture also have been found at San Marino, where the cathedral now rises on the ancient site of the fourth century chapel of the saintly founder.

WEALTHY MATRON GIVES MOUNT TO THE HERMIT

From neighboring fields and pastures and little settlements, came the weary and oppressed, seeking peace and the Christian faith upon the two mounts. Poor and simple people, their wants were easily satisfied. Soon two small villages or colonies sprang up about the little churches, taking the names of the two apostles. Legend adds that in those early days, when hewing and quarrying was the industry, even as it is today, the two saintly stone-cutters exchanged their implements, tossing them back and forth from the two mountains!

The fame of the saintly hermit of Mt. Titanus spread abroad. Felicissima, a wealthy Roman matron of Rimini, impressed by the pious man, who had been bidden to come to that city, and grateful for receiving the light of Christianity and for the salvation of her sons, gave him the mountain, which she owned, as absolute and perpetual property.

The influence of San Leo has been wiped out by the centuries, while that of San Marino exists today, with a significantly simple appeal in these warring times.

Marino's desire was to found a free society, based upon liberty, justice, simplicity, charity, virtue, and, above all, a love of peace. When the good man came to die he called his followers about him and bequeathed to them his mountain, "free from every other man" (*ab utroque homine*). His parting prayer was that they never seek enlargement of territory by violent means. War, though a painful necessity for those acting in self-defense, was an unpardonable crime in those who caused it. Begging his followers to remain true to the faith and to live in perfect accord, freemen all, he passed away, little dreaming that in the twentieth century his little community would stand, a monument to his peaceful teachings and simple form of government, in the midst of a war-torn world struggling against autocracy for the peace and liberty of all nations.

THE MISSION OF THE FORTRESS BELL

As one stands looking out over the history-laden panorama at sunset, the sound of the fortress bell calls vividly to mind how little changed from ancient times is the government today and how true to tradition are these steadfast people. It is the bell announcing the Arengo, or Arringo, for the following day. For always at Ave Maria, the day before the election of officers, the inauguration, the fête of San Marino, and the semi-annual Arringo, or assembly of the heads of families, the great bell gives the tidings. Its ringing also calls the council meetings; its only sinister mission is to announce the passing of a penal sentence.

Twice a year, the first Sunday after the 1st of April and the 1st of October, heads of families have the right to assemble before the regents in the Council Hall and present petitions or suggestions for change or modifications in existing conditions. Prohibiting farmers from selling their produce before arriving at the Borgo, the introduction of religious teaching in the public schools, the question of a water supply—such were the most recent petitions of these twentieth century fathers of families.

The bell of the fortress calling the assembly of heads of families reflects the dawn of government. One sees in its past the shades of the patriarchate and the dim outline of the referendum.

In the beginning, the followers of San Marino recognized as their head the rector of the monastery. Increasing numbers of inhabitants led to the formation of the Arringo, the gathering of fathers of families, presided over by the rector of the monastery. In the tenth century the government was liberated from the authority of the rector of the monastery, and the Arringo was replaced by the Council General, the assembly of heads of families continuing twice a year, as today, with the right only of petition.

THEIR TERRITORY EXTENDED THROUGH PURCHASE, NOT CONQUEST

The retiring quietude of the mountain community was now stirred by the necessity of taking account of the outside world. Already the Court of Rome, basing its right upon the Pepin grant of temporal power, laid claim unsuccessfully to San Marino.

The eleventh century upheaval, which caused the Italian middle class, oppressed by feudalism, to form communes wherever walled cities existed, found San Marino also a commune, with its statutes and consuls. Through purchase, not conquest, these sober people extended their territory. They began, according to the needs of the times, to fortify their commune. The imposing Rocca fortress, a fourteenth century embattled stronghold, was begun in these troublous times. The strength of its walls, whose crumbling might encircles the citadel today, gave San Marino a formidable argument that it be left in peace.

The character of the little Republic and its twin mountain, San Leo, recall stories of sieges and the scaling of walls. And many were the attempts which marked its medieval history. The support given by the Sammarinesi to the Montefeltri against the Malatesta tyrants led to the agreement between Duke Frederic of Urbino and Pope Pius II, whereby the castles of Fiorentino, Montegiardino, and Serravalle, their courts and dominions, as well as Faetano, were granted to the Republic.

The liberty of San Marino, existing from the day the Dalmatian saint planted

Photograph from Alice Rohe

WITH THE THREE GREAT TOWERS OF THIS LITTLE REPUBLIC EVER IN VIEW, THE SAMMARINESE PLOWMAN WENDS HIS WAY

Photograph from Alice Rohe

THE IMPREGNABLE MEDIEVAL CASTLE CROWNING SAN LEO, TWIN MOUNTAIN OF SAN MARINO

In this stronghold, the arch-impostor Cagliostro, who, after selling love-philters, elixirs of youth, mixtures for making ugly women beautiful, committing many acts of knavery, and serving prison terms both in the Bastile and in London's Fleet prison, was imprisoned in 1789 and died six years later. There is only one gate and one roadway to this stronghold.

Photograph from Alice Rohe

THE INAUGURAL PROCESSION IN SAN MARINO

The two regents, heads of the State, are seen leaving the palace preceded by an attendant who bears the keys and seals of the Republic. An inauguration takes place every six months. Regents may not serve two successive terms.

the cross, carved with "Libertas," upon Mount Titanus, seemed doomed forever in the sixteenth century, when Cæsar Borgia, having destroyed the lordships of Umbria, the Marches, and Romagna, raised his avaricious eyes against the land of liberty. At the death of his father, Pope Alexander VI, Borgia was forced to abandon his designs upon Italy and the Republic's lost liberty was soon regained.

The infamous Cardinal Alberoni occupancy, from October 17, 1739, to February 5, 1740, when the town was sacked, following the refusal of the Sammarinesi to renounce allegiance to their Republic, was the longest usurpation of their liberty. The event, which still stirs resentment in the hearts of these people, was immortalized by Carducci in his address at the dedication of the new government palace in 1894.

Napoleon respected San Marino's independence in 1797, offering large tracts of territory, which the Sammarinesi cour-

Photograph from Alice Rohe

THE ONION CURB MARKET: SAN MARINO

The commercial life of the Republic centers in the Borgo, and every market day housewives and servants come down from the heights to buy their vegetables. Important fairs are also held here in September and October, when traders come not merely from all parts of the 38 square miles of San Marino, but from neighboring towns of Italy as well.

teously refused. Writing to his minister regarding the map of Italy, he said:

"We consider San Marino as a model Republic."

THE GOVERNING BODY

Today the government of San Marino, impregnated with the spirit of its fourth century founder, preserves picturesque forms and customs.

A council of sixty citizens—the Grand Council—is the governing body, which has the supreme power accorded it by the primitive popular Arringo, composed of heads of families. Until recent times these sixty were chosen, one-third from the patricians, one-third from the landowners, and one-third from the peasants. There is no official recognition of nobility in these days, patricians and nobles, al-

Photograph from Alice Rohe

FAIR DAY IN THE PIAZZA BELZOPPI: SAN MARINO

Fair days in the little Republic present a kaleidoscope of color. Gayly kerchiefed peasant women, farmers, land-owners, stock-breeders, boys and girls mingle in a democratic throng.

ways created for special service to the country, being citizens like all the rest of the inhabitants. Originally, councillors were elected for life; now they are reelected every three years. As few changes are made, the life term practically exists. The only times the Sammarinesi exercise their power of voting is at these triennial elections and when five councillors, through death, are lacking in the sixty.

From its number, every six months, the Council chooses two consuls, or captains regent, who are invested with the executive power and who preside at meetings of the public councils. These, before San Marino abolished class distinctions, were chosen, one from the patricians, one from the peasants. The office is honorary, each regent being allowed 150 lire (about $30) for clothes. The elaborate medieval costumes for state events and the frock coat and silk hat for ordinary public occasions would scarcely be covered by that amount.

The regents, with their six months' tenure of office, can be reëlected only after an interval of three years, the dominating idea to maintain a free government of the people without peril of a one or two man power being seen here, as in every law and custom of the Republic. Back in the thirteenth century the titles of these two consuls were changed to captain and defender, signifying their special medieval mission of leading and protecting the people. In the fourteenth century the present titles of captains regent were adopted.

NO WOMAN'S SUFFRAGE IN SAN MARINO

From the Council of sixty there is also chosen each year what is known as the Council of Twelve, which acts as a mediary body between the Grand Council and the regents. It has the power of judging criminals in preliminary hearings and civil cases of the third grade and als assists in contracts for minors an

women. Needless to say, there is no woman's suffrage movement in San Marino.

From the same sixty councillors another nine are chosen for the Economic Committee. There is also a Secretary of Foreign Affairs and a Secretary of Home Affairs.

Justice is administered by three foreign judges, changeable every three years. San Marino's love of justice is reflected in this judiciary system, for the employment of foreign judges, a custom from early times, precludes prejudices and favoritism, which might arise in a community where nearly every one is related either by blood or interests. As for the jury system, San Marino regards its dangers as too obvious.

Geographically speaking, there is nothing on the level about San Marino. Life is one continuation of ups and downs. The daily excitement of meeting the auto which plies—in summer twice a day, in winter once—between Rimini and the Republic would be breathless if the inhabitants were not accustomed to climbing. Life is as peaceful as Saint Marino could have wished. It is possible to walk up and down the steep, winding streets, flanked by their quaint old stone houses, without meeting a stray pedestrian. That, of course, is during ordinary hours, for all San Marino turns out for the arrival of the auto. Housewives who have given commissions to buy supplies in Rimini are always in evidence. Then, too, the post arrives and the whole population seems to congregate in the Piazza della Liberta for its distribution.

CITIZENS FOLLOW THE OCCUPATION OF MARINO

The quiet of San Marino is proverbial. From the slopes beneath the ancient fortress the sound of the stone-cutters at work in the quarries recalls the story of the Republic's founder even into the heart of the capital. The Sammarinesi of today follow assiduously their founder's occupation, which is their principal industry. Stone is carted to Rimini, Forli, and all the neighboring towns and countrysides.

In this tranquillity there is small need of a police force, and even the militia of the fortress, now used as a prison, was recently disbanded. The public force, with the exception of several carabinieri, whose duty seems to be to make picturesque details in the narrow streets, consists of the gendarmes and the Noble Guard, now called Guard of the Council. It is their duty to act as escort of honor for the captains regents on days of civil and religious solemnity, and especially to guard regents and councillors when in public session. The brigadier of gendarmes, or carabinieri, during these war days examines passports and decides whether strangers may remain in the Republic.

As for the national defense, every citizen between 18 and 60 years of age is enrolled for military service in case of the country's need. There is no conscription, the Sammarinesi of all centuries recognizing their obligations of defense as a matter of course.

SAN MARINO'S GREAT FEAST DAYS

On its great days, October 1, April 1, and September 3, how San Marino changes from its accustomed calm! To the outside visitor, who escapes from the direct impressions and thoughts of war into this little community, the festal days seem like a moving picture of the middle ages. The truly medieval ceremonies on the evenings of September 15 and March 15, and the winter *festa* of February 5, the fête of St. Agatha—the last named dear to every Sammarinese heart as the anniversary of the final liberation from the Alberoni occupancy—are of only slightly less importance.

On the 15th of September and the 15th of March, at the hour of Ave Maria, the bells of the government palace and the fortress announce the hour of electing the new regents. San Marino flocks to the Piazza della Liberta. Within, the Council is in session, the regents having been escorted from their homes in picturesque cortège to the palace.

The ceremony of choosing the new regents is an ancient one. First of all, by extracting names, 12 nominators are chosen. Each of these must name a candidate, one in whom he has full faith and also one who has not for three years held that office. The 12 names are then voted upon by the white and black ball

Photograph from Alice Rohe

A GATEWAY IN THE ANCIENT WALLS OF SAN MARINO: THE ROAD LEADS TO THE QUARRIES IN WHICH THE REPUBLIC'S FOUNDER LABORED

Few places on earth have retained their medieval atmosphere as effectually as San Marino, and yet even here the sign of progress is in evidence. Note the electric light conspicuous in the arch of the Porta Della Fratta, beneath whose shadow the women of the little Republic come to do their weekly washing.

system, the six receiving the highest number of votes being the candidates. These six names are then coupled in three pairs, the arrangement being amicably made by the candidates.

A CHILD CHOOSES THE REGENTS

The cortège then issues from the palace—the regents, in their medieval state costumes, accompanied by attendants in livery bearing torches. Up the steep street to the near-by cathedral, the cortège goes. At the door of the church the regents are met by the archpriest, who awaits them with holy water and blesses them.

The religious element of primitive times in San Marino's government is evidenced in all the modern ceremonies. The regents take their posts of honor on the canopied throne beside the high altar. Guards, carabinieri, the entire cortège, stand at attention in the long nave. The archpriest offers a prayer to San Marino; then he reads the six names and puts the three couplets in three little silver balls. They are placed in a silver urn, shaken about, and a child is called to draw out one of them. The little one holds it up before the breathless congregation. It is then given to the regents, who open it and read the names. They in turn go to the high altar and give the paper to the priest, who reads aloud the names of the new heads of the government. Instantly, the band sounds the national hymn and the cortège with flaming torches winds its way back to the palace. The newly elected regents are officially notified with medieval ceremony.

THE INAUGURATION CEREMONY

The inauguration is the big event of the Republic, when the tradespeople, a number of whom are souvenir-sellers, look forward to their chief profits from visitors. The simplicity of life here is such that 20 or 25 strangers are regarded as a great invasion, and the whole community is agog.

The important occasion is announced the night before by the ringing of the fortress bell. On the morning of the inauguration a series of parades begins. The noble guards, resplendent in beplumed hats and gold-braided uniforms, preceded by the band, first march to the homes of the regents to escort them to the palace in Via Giosue Carducci, where they clothe themselves in the state garments.

At ten the gorgeous procession moves through the narrow streets to the government palace. The regents having entered, the populace, with all the cortège, stands at attention for the moment when the flag is unfurled from an upper balcony. As the banner, blue and white, with the coat of arms of the Republic—the three plumed towers, encircled in a laurel and oak wreath tied with a ribbon bearing the motto "Libertas"—is raised, the band strikes up the national hymn, a quaint, unmartial air, founded on an ancient theme of Guido Monaco.

The spectacular moment which the populace awaits is when the regents leave the palace to attend mass in the church where lie the relics of the Republic's saintly founder. Following mass, at which the regents assist in their official posts beside the altar, the retiring regents on the canopied throne, the new ones in a simple pew, the cortège goes back to the palace, where the inauguration ceremony takes place.

An address by a former regent is always delivered. Then the new regents take the oath of office and the old ones, removing their insignia of power, place them upon the future heads of government, bestowing upon them the seals and the keys of State. The ex-regents step down from their seats of authority and the new ones take their place. Then the ceremony is over and the cortège accompanies the regents to their homes.

The whole day, however, is one of gaiety. The band serenades the regents, who in turn receive the townspeople. From all the hamlets of the Republic people crowd to the capital. It is a constantly changing picture of life which seems far removed from the world of today.

THE FÊTE OF SAINT MARINO

The spirit of primitive times, developed into picturesque customs during the middle ages, casts its spell over the Republic on its day of veneration and rejoicing, September 3, the fête of Saint Marino.

Photograph from Alice Rohe

SAN MARINO'S WAR HOSPITAL AT THE ITALIAN FRONT

The mound in the central foreground is a flower-bed, with the seal of the Republic appearing in blossoms

The day opens with the joyous ringing of bells, and at half-past nine the band plays in the Pianello. The usual ceremony—the unfurling of the flag, the cortège of regents proceeding to the cathedral—takes place with a fervor as though ever new.

After solemn high mass the procession, augmented by many priests, with the sacred relic, the head of the saint enclosed in a silver bust, proceeds through the town, blessing the various institutions. At noon comes the vital moment when the archpriest blesses the government palace with the venerated relic. The mid-day hour is tense with religious feeling. Standing beneath the loggia, the priest raises high the revered reliquary. At the instant of elevating the silver-encased head, as though automatically released, the bells peal forth and kneeling San Marino rises to its feet.

The ceremony of February 5 has especial significance, when from the church of Saint Agatha, in the Borgo, the Sammarinesi climb in procession to the cathedral, or La Pieve, as the church of the saint is called; for it celebrates in the memories of the people the end of the Cardinal Alberoni usurpation. Legend tells how long ago, one cold winter day, the whole Republic being covered with snow, the people shivered in their homes and decided not to fare forth. The next morning, to their surprise, they found the snow marked from Saint Agatha to La Pieve with the tracks of wild beasts who, in rebuke to the people, had held the procession. Needless to say, the function has taken place, regardless of weather, ever since.

Though intensely devout, the religious atmosphere of San Marino is noticeably different from that of Italy. There is less of form, despite its reverent medieval customs. The Sammarinesi seem to have kept alive the primitive spirit of the early Christians in spite of the fact that at the end of the tenth century they were drawn into the hierarchy of the Roman

Photograph from Alice Rohe

STONE QUARRIES BENEATH THE ANCIENT WALLS OF SAN MARINO

The twentieth century Sammarinesi follow assiduously the occupation of their fourth century patron saint. Stone is carted to Rimini, Forli, and neighboring Italian towns.

Church. Their religion is interwoven with their law. Here the religious marriage ceremony is legal and the only one performed, while in Italy the civil ceremony is obligatory.

Monasteries and convents there are, where the simple communist idea of primitive times seems also to prevail. At Serravalle, an ancient custom exists which preserves the early habits of the religious orders. The little hospice is still open where in olden times wayfarers could find a haven and where foundlings were left. The grain from the little farm owned by the hospice was made into flour and distributed among the poor on Christmas eve. The unchanging customs perhaps reflect the reason for the peaceful life of the Republic.

THE RECREATIONS OF THE PEOPLE

The quiet recreations of the Sammarinesi are picturesque to the outsider. During the summer months on Saturday nights, band concerts are held in the Piazza della Liberta. On these evenings, when a full moon hangs over the dark outlines of distant mountains, the picture is reminiscent of those medieval squares as reproduced in our grand operas. Couples walk back and forth about the statue of Liberty, or they seat themselves on the walls separating the steep street from the piazza, or lean against the parapet which overhangs the depths below. Others gather about little tables before the age-gray café, all living pictures of days that seem long past.

In winter, life is a different story. The little mountain Republic is so cold and such deep snow fills the narrow streets that the people practically hibernate. The climate, which in summer is especially delightful, changes from warm to cold early in October and remains cold until April.

The dwellers in the capital, bearing

family names interwoven in the history of the Republic, are for the most part government employees, professors in the college, storekeepers, or doctors. There is a good hospital and a college which admits to many of Italy's universities.

COMMERCIAL LIFE CENTERS IN THE BORGO

The commercial life of the Republic is centered in the Borgo. Every week, market days draw from the capital above housewives and servants. The fairs, the chief ones being in September and October, are occasions when buyers and sellers come not only from all over the Republic, but from neighboring Italian towns as well.

Fair days present a kaleidoscopic picture of gay-kerchiefed peasant women, farmers, stock-growers, boys and girls leading sheep, pigs, and cattle. The cattle market from a distance looks like an encampment of innumerable tents, with the indistinguishable forms of hundreds of great white cattle, which are the beasts of burden in this country.

War has demanded its toll even among Sammarinesi cattle, but so prosperous is the stock-raising industry, one of the most important of the Republic, that the fairs are still imposing and picturesque events. One sees young and old climbing the ascending roads, bringing their cattle, little calves, half grown, good workers, good breeders, cows that provide milk and daily toil as well—all for sale.

In the piazzas, peasant women, with great garlands of onions and garlic, baskets of eggs, picturesque flat baskets full of live chickens, hampers of the famous San Marino sheep's-milk cheese, bargain and barter. Booths with everything from dress goods to hair oil are surrounded by eagerly buying peasants and townsfolk; for San Marino has no well-stocked stores, and therefore the fairs, with their visiting merchants, are of unusual importance.

The towering capital bears no fruit, except the heritage from its founder—stone of the quarries—but the villages and countrysides surrounding Mount Titanus yield their share of various products. Aside from cattle, poultry, eggs, cheese, and vegetables, the vine plays a notable part in the life of the Republic, and the wine of San Marino is of a superior quality.

All the picturesque features of the vintage of poetry are found in San Marino late in September. All ox-carts seem to lead from vineyard to wine-cellar, and feet are stained red with the juice of the grape. In the vineyards bare-footed men pack the grapes in huge barrels atop the ox-carts, which transport the fruit to the cellars. Here peasants, juice spurting through their toes, crush the grapes in great vats from which the escaping liquid runs off, ready to be stored in barrels for fermenting. Here the young figure of a modern Bacchus, there old men like satyrs, stamp the future wine in these dark canteens. Even the smallest farmers, the poorest peasants, who boast no cellars, tread their grapes in the farmyards or wagon-sheds.

FROM CRADLE TO GRAVE

Picturesque customs abound in San Marino. From birth to death the Sammarinesi pass the circle of existence as did their forebears. One of the characteristic sights is that of a christening party—the midwife, with the baby in her arms, covered by a huge stiff mantle, looking like an animated piece of furniture moving through the cobbled streets toward the cathedral, followed by the godparents of the newcomer.

When Sammarinesi are carried to their last resting place—the architecturally attractive cemetery at the end of a cypress avenue down the slope of the mountain—the coffin, covered with its heavy pall, is supported on the shoulders of friends until the city gates are reached; for no funeral car could wind its way through those steep, narrow streets. At the gates the cortège is met by the hearse, which proceeds down the mountain to a cemetery that is a modern copy of the ancient catacombs.

Beneath the chapel and the cloistered loggia of fourteenth century style, graves are hewn from the living rock, as in those early Christian burying grounds. One passes through avenues flanked by last resting places, here tiny ones for children, or still smaller ones for bones; there larger ones for adults.

The Sammarinesi seem little occupied with business, the few stores of the capital doing a leisurely trade. But in its quiet way San Marino has touched on most of the economic and social problems to its own satisfaction. It has its compulsory education law, and everything is being done to eradicate illiteracy, which still prevails among the peasants. A good school system, a college, and an excellent little museum attract students from neighboring towns.

THE REPUBLIC'S COÖPERATIVE INSTITUTIONS

The Mutual Aid Society, with an important savings bank, whose object is to aid the working classes, has many branches reaching into the public life. Coöperative societies have been fostered by the Mutual Aid, among the interesting ones being the Coöperative Canteen. Its object is to serve good wine at a low price. Drunkenness is little known in San Marino, where crime is a rare occurrence. The Sammarinesi know what is good wine and they insist upon having it. One can always tell a wine shop, even when there is no painted sign, by the branch of a tree or bit of bush hung over the door.

The public bake-house is one of the busiest of coöperative institutions. Before October, 1917, families nearly always sent their bread to the public oven to be baked. In October last, the economic effects of war made it necessary for the Republic to prohibit private bread baking. Bread tickets are issued and the bread, made in the public oven, is sold during certain hours of the day in the market loggia.

The grain magazine, where members of the Mutual Aid could buy grain and flour at low prices and on credit, has naturally been affected by the war.

The branches of the Coöperative Labor Organization indicate the occupations of San Marino. It includes stone-cutters, masons, carpenters, and manual laborers. The Emigration Society's aim is to place Sammarinese laborers in other countries. The Consumers' League, of which the bake-house is a branch, boasts an economic kitchen.

There is a charity organization, a permanent home for chronic invalids among the poor, a fresh-air fund, which sends babies to the seaside in the summer, a hospice for winter, and of course a Red Cross Society.

Two theaters, one in the Borgo, one in the capital, are scenes of occasional histrionic fêtes, but dancing and theater-going have been discouraged since Italy's entrance into the war, this being the simple way of showing sympathy for the war-shadowed nation which surrounds the Republic. These quiet, unassuming people—earnest and sometimes austere—have adjusted life to their own wants. Indeed, the little Republic, which impresses one as very neat and tidy in its appearance, is quite as orderly in its social and economic life.

A REFUGE FOR THE PERSECUTED YESTERDAY AND TODAY

But while it seems self-sufficient and asks only for peace and tranquillity, San Marino has been a refuge for fugitives through all the ages, since the Dalmatian stone-cutter with his early Christians found shelter on this mountain top. Today, one finds refugees of various kinds and conditions living comfortably in the Hotel Titano or with Sammarinese families.

Penal offenders are not permitted to remain in the Republic, but political fugitives are given a haven. In times past many famous people have found shelter here, and today men known internationally live in the tranquil shadows of Mt. Titanus, awaiting their hour. Extradition agreements exist between the Republic and England, Italy, Belgium, and Holland.

Back in 1849, Garibaldi, with his handful of valiant men, found a life-saving refuge here when pursued by overpowering Austrian troops. The incident still lives in the hearts and history of San Marino, where tablets bearing Garibaldi's words on that occasion, a statue of Garibaldi, and a square named in his honor testify the love of the Sammarinesi for the great liberator. The coöperative canteen is situated on the ground floor of the

Photograph from Alice Rohe

EVEN THE HUMBLEST PEASANTS HAVE THEIR VINES AND MAKE THEIR CASKS OF WINE IN THE OPEN, TREADING THE GRAPES WITH THEIR BARE FEET: SAN MARINO

Photograph from Alice Rohe

THE THREE TOWERS, HISTORIC SYMBOLS OF THE REPUBLIC OF SAN MARINO

The houses of the Sammarinesi, flanking steep, narrow streets, seem to be clambering up the heights toward the three summits crowned with their medieval piles of masonry

house where Garibaldi and his wife, Anita, were given hospitality.

In the far-off sixteenth century, the Duke of Urbino found a haven here from the Borgia confiscator, the Sammarinesi helping him to escape to Venice, dressed in peasant's clothes.

SAN MARINO SENDS HER YOUTHS TO WAR

Although doves soar undisturbed above the Piazza della Liberta and San Marino nourishes its ancient desire to be left in peace, the Republic feels how impossible it is to remain unaffected by the world war. Naturally, the great effect on San Marino is economic, but the spirit of humanity, of liberty, has pulsed too strongly for centuries in this little community to permit it to be indifferent to the conflict surging about it. And so San Marino has shed its blood for the great cause. Fifteen of its youths volunteered in the Italian army. Two of them have already fallen upon the field of honor, three are Austrian prisoners, and four have been wounded. And San Marino, thrilling with the cause of liberty against autocracy, maintains a finely equipped hospital at the Italian front, enthusiastically replacing the one lost in last October's disaster.

Officially, San Marino is neutral. The report that the Republic had declared war against Austria—which was largely circulated—is without foundation, say the Sammarinesi.

"What a ridiculous figure we would cut—a little republic, without a standing army, declaring war against a great barbaric horde," said Professor Onofrio Fattori, councillor of 23 years' standing and former regent. "The truth of our relations is this: Several Sammarinesi are prisoners, and when we attempted to have them restored to us the Austrian government replied that we were no longer neutral, since our citizens were fighting for Italy, and therefore the request could not be granted."

The world recognizes San Marino as an ally on the side of democracy.

PRESIDENT WILSON BREAKS A SAN MARINO CUSTOM

War has brought an unprecedented breach of tradition in conservative San Marino. It is only natural that the littlest republic in the world should admire the biggest one; but as for the breaking of an ancient custom—President Wilson has accomplished that. Sammarinese babies, at least one in every family, are named after the patron saint. The others bear names of different saints or of distinguished men of the Republic. On April 25, a son was born to the daughter of the Sammarinese historian, the late Marino Fattori. The family was pulsing with President Wilson's historic address in which he announced the breaking of relations with Germany, and the parents decided no other name should be given the baby than that of the man they call the great apostle of peace and liberty.

So in La Pieve, with all the quaint Sammarinese customs, Baby Reffi was christened Wilson, and the records of the Republic were given a decided innovation. The fact that the letter "W" does not exist in the Sammarinese alphabet introduces a slight deviation from the American pronunciation, but "Vilson" conveys the idea quite satisfactorily.

Naturally, the language of San Marino is Italian, but the people use a dialect which, though based upon Italian, is not always recognizable.

San Marino's love of established calm has been disturbed by the same economic problems which agitate the entire world. On all supplies received from Italy this land of peace is paying its war tax.

Products which come from within the Republic have not reached the high prices of other countries. As cattle abound in great numbers, meat is cheap. Eggs, when selling for 7½ cents apiece in Rome, were obtainable at 4½ cents in San Marino. It is doubtful if in any other civilized country in the world a pair of fine young chickens could be bought at this time for four lire (about 80 cents).

TAXES ARE INSIGNIFICANT, RENTS LOW

Milk in bottles, carried in bag-shaped baskets of straw by girls and women from the farms below to the city, created an unheard-of scandal when it sold for 50 centimes (about ten cents) a quart. Though prices have increased enormously, on account of buying from outside markets, living is cheaper in San Marino than elsewhere.

Taxes are so insignificant and rents so

Photograph from Alice Rohe

A CITY SET UPON A HIGH HILL: THE CAPITAL OF THE WORLD'S SMALLEST NATION AND EUROPE'S OLDEST STATE

The peasant women of San Marino follow their peaceful pursuits, while all about their miniature Republic sounds the clamor and the clangor of a world in the throes of war

low that the Republic does not have to face the serious problems of other countries. This is due to the fact that the government has no complex and expensive State organization to maintain.

A palace with a garden the size of a city block is taxed 11 francs a year, while a home consisting of six large rooms, cellar, and garret pays the astounding annual tax of one lira 70 centimes (about 34 cents).

As for income, tobacco and salt, which San Marino receives at cost from the Italian Government, with an annual compensation of 300,000 lire for the suppression of custom duties, are the only sources of revenue. San Marino sells its salt and tobacco much cheaper than does Italy, and its revenue from these two articles is 200,000 lire a year. There is also an agreement between Italy and San Marino that the latter shall not produce certain articles.

The relations between the Italian Government and the Republic are not those of a protectorate by any means, as San Marino, so proud of its autonomy, refrains from an accord which could give rise to that term. From its early life politically, however, San Marino has always had a stronger protecting friend—first the dukes of Urbino and later the Papal power. Today, the big friend is Italy, and the relations are described in the convention of 1894 as "Rapports of friendship and of good neighbors between Italy and the Republic." Further:

"The Republic, having the firm conviction that the protecting friendship of His Majesty the King of Italy for the conservation of its most ancient liberty and independence will never become less, declares that it will not accept that of any other Power."

All the other articles demonstrate the

Photograph from Alice Rohe

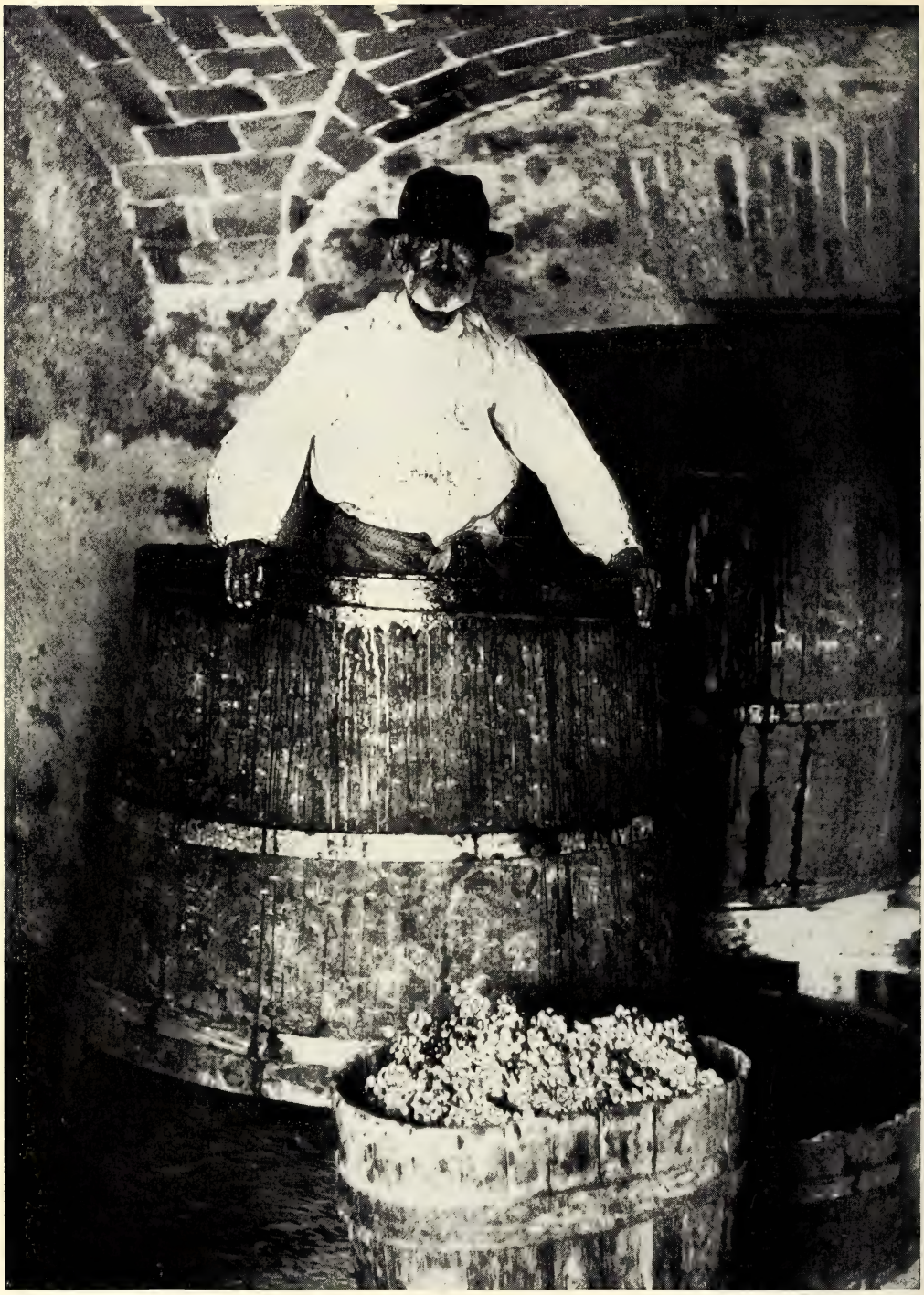
SPINNERS IN THE SUN: A CHARACTERISTIC SAN MARINO COTTAGE SCENE

While life in the mountain Republic is primitive, many domestic problems are simplified by coöperative institutions. For example, there is a

Photograph from Alice Rohe

SUNDAY MORNING GATHERING IN THE PUBLIC SQUARE: MONTEGIARDINO, SAN MARINO

The weekly social hour in the villages of San Marino comes on Sunday after mass. As in the towns and villages of America, the people, dressed in their best, linger a while after church services and discuss the affairs of the community with their neighbors. All have labored during the preceding six days and have had little opportunity for the exchange of opinions on the various topics that agitate every small community.



Photograph from Alice Rohe

HERE OLD MEN, LIKE SATYRS, WITH PURPLE JUICE SPURTING BETWEEN THEIR TOES, CRUSH THE GRAPES IN GREAT VATS

The escaping liquid is drawn off and stored in barrels in cellars hewn from the rock, where it is allowed to ferment. The wine of San Marino is of a superior quality.

parity and equality in which the two States are considered.

San Marino has coined its own money, though at present the Italian monetary system is adopted. It has its own postage stamps, the ever-present three towers being engraved in different colors in accordance with their value. The international telegraph and postal regulations are placed in the hands of the Italian Government.

Anomalous as it may seem, the little Republic has, on rare occasions in the past, bestowed titles of nobility upon foreigners who have greatly benefited the country. As for its nobility or patrician order, which seems to have crept in during the seventeenth century, when the title was given the regents, later councils eliminated such distinctions among a free people. The patrician families whose names are enrolled upon the Republic's "Book of Gold" are those who have performed exceptional services for the community.

THE REPUBLIC'S ORDER OF KNIGHTHOOD

There is a knightly order of five grades called the Equestrian Order of Civil and Military Merit. The first three grades are bestowed for service to the Republic; the last two for service to humanity.

All the forms and ancient customs are very dear to the people. The peasants evince a wonderful reverence for their country. These *contadini* live among their vines and fields, with their sheep and their great white cattle, keeping alive customs that are only picturesque memories in other lands. Here the women, sitting in the dooryard, carding the wool or spinning the flax, have ever before them the unchanging outline of the three-towered mountain. Men guiding the plow, behind the great white oxen, seem ever laboring toward the protecting heights of the guardian citadel.

On Sundays, the outpouring from the churches in the castelli, or villages, is a colorful picture of peasant life which could have been posed a hundred or many hundred years ago. And a sight which makes the Republic a decided contrast to Italy, only a few miles away, is the number of young men, living over again today the customs of their fathers. A change in their habits would be a disaster.

San Marino has had its opportunities to change from unassuming quiet and simple integrity. Some years ago an alluring offer was made to turn the Republic into another Monte Carlo. Though it would have meant wealth to the citizens as well as the government, the offer was rejected.

The littlest Republic in the world, true to the precepts of its fourth century Christian founder, the Dalmatian stonecutter, has perhaps found the secret of eternal peace and perpetual liberty in the modesty of its pretensions.

THE BRITISH TAKE BAKU

WHILE lacking the romantic interest and religious significance of their triumphant Holy Land campaign, which resulted in the elevation of the Christian cross once more over Jerusalem, no military operation of British forces in the Near East has been of greater importance than the recent occupation of Baku, the great oil city of the Russian Empire.

Four-fifths of all the oil produced in Russia comes from the 2,700 wells of the two vast oil fields of the Baku region. In 1915 (the latest available statistics, owing to the chaotic conditions which have obtained for two years throughout the Slav dominions) the Baku output was more than seven million tons of oil. The lighter grades formerly were transported by pipe line to Batum, on the Black Sea.

Baku is built in the form of an amphitheater on the south side of the Apsheron peninsula, which juts far out into the Caspian Sea. It is said to derive its name from the violent squalls (badkube) which frequently strike this section of the west Caspian coast.

Although there was a settlement at this

Photograph by Hon. John B. Jackson

A STREET SCENE IN BAKU

point as early as the sixth century, Baku, which is now a town of nearly 250,000 inhabitants, did not become a Russian possession until a little more than a hundred years ago. The upper part of the city, corresponding to the back rows of an amphitheater, is the picturesque Tatar quarter, with numerous narrow lanes and oriental bazaars. The most striking architectural feature of the place is the massive Kis Kale, or Maiden's Tower, a monument of the Byzantine period, which rises to a height of nearly 150 feet.

Centuries before the wealth of the Baku oil fields was realized, Persian fire-worshipers discovered natural gas issuing from the fissures of rock in this vicinity, and a few miles from the modern city there may still be seen the ruins of an ancient temple where these burning jets from the lower regions were the objects of adoration.

Aside from its importance as the Tampico of Europe, Baku had several thriving industrial establishments at the outbreak of the war, such as tobacco factories, flour mills, and sulphuric-acid works. Its trade with Persia and the Transcaucasus territory is active in peace times, the principal articles of commerce being raw silks, cotton, fruits, wines, and rice.

In addition to its advantages as a seaport, Baku has in recent years enjoyed railway connections both with Batum, 560 miles to the west by way of Tiflis, and with Rostov-on-the-Don, 818 miles to the northwest.

INDEX TO THE SOCIETY'S MAP OF THE WESTERN THEATRE OF WAR

Attention of readers is directed to the INDEX to the Society's MAP OF THE WESTERN THEATRE OF WAR which may be obtained from the headquarters of THE NATIONAL GEOGRAPHIC SOCIETY, 16th and M streets northwest, Washington, D. C. The index is especially valuable in quickly locating any of the 15,000 places near the battle lines in France and Belgium shown on the remarkable map published in the May number of the GEOGRAPHIC. Practically every place mentioned in the news dispatches is clearly shown on this highly detailed map and may readily be found by the index. Additional copies of the map (26¼ x 31 inches) on paper are 75 cents (including index); on linen $1.50 (including index); index alone 25 cents. Postpaid in the United States. Foreign postage 25 cents extra.

INDEX FOR JANUARY–JUNE, 1918, VOLUME READY

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Editor National Geographic Magazine,
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Sincerely yours,
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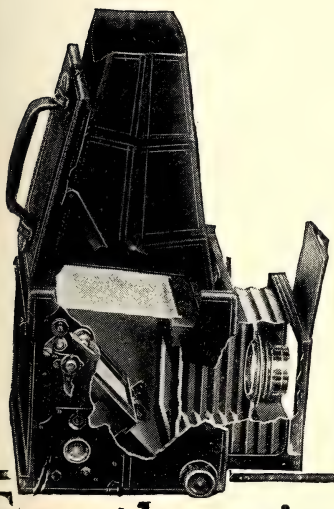

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There's a fester spot on this fair world—a spot that has spread from Berlin until it has poisoned all of Germany. And there's just one cure—the knife. The poison cannot be dammed up, it must be cut out else this monstrous thing called Kultur will fasten its hideous self on all the world.

Our boys over there have learned to believe. They are seeing the horror and the pity of it all. *They know*, and knowing, they set their jaws and go over the top with a righteous wrath, a holy anger that carries all before it. We have got to feel this war as they feel it. Have got to believe, and believing, set our jaws and do our part whatever that part may be. Right now it's money, money, money.

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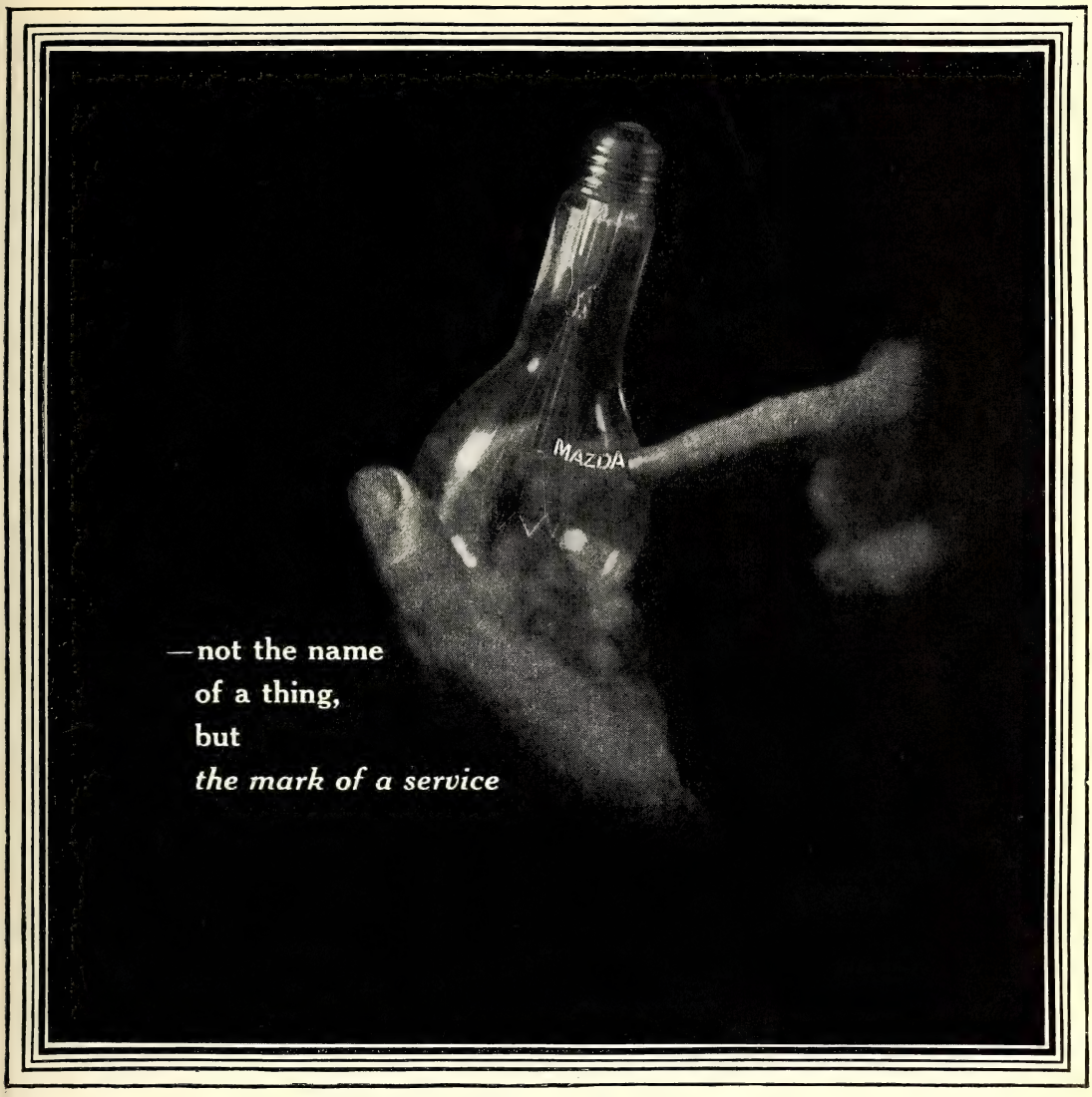

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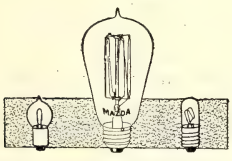

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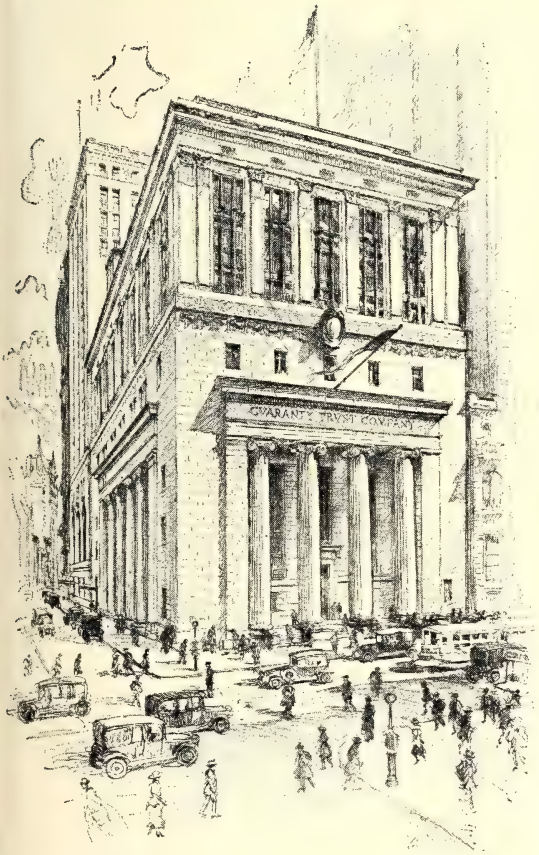

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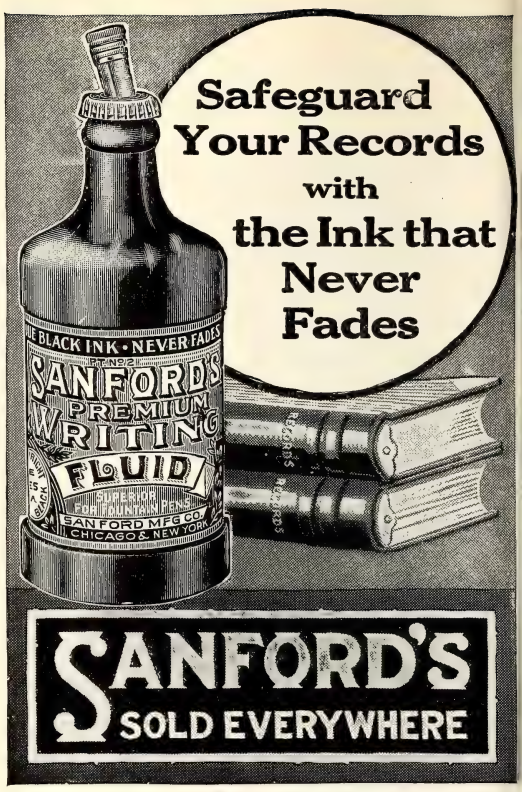

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Sold for years exclusively upon the recommendation of the dental profession. Effective not only in the treatment of pyorrhea but also in its prevention, when used regularly as a dentifrice.

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Upon request we will send you a sample of Pyorrhocide Powder, together with our educational booklet on the cause and effects of pyorrhea and how it may be prevented.

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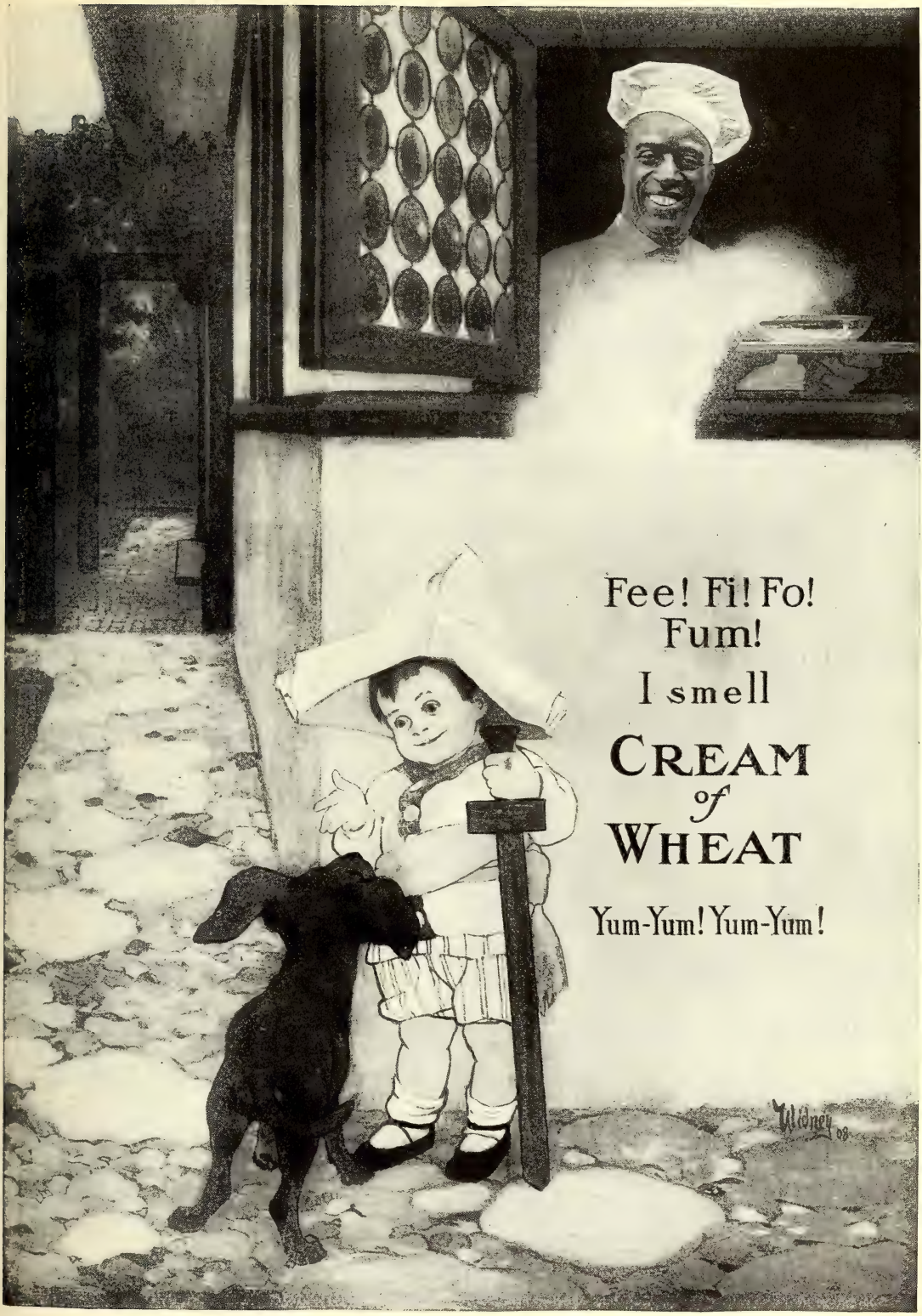

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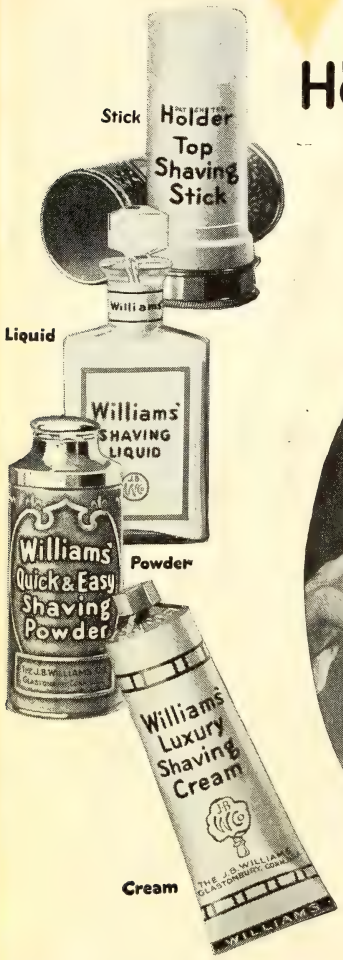

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VOLUME XXXIV NUMBER THREE

THE NATIONAL GEOGRAPHIC MAGAZINE

RETURN TO
Roland Case Rose

SEPTEMBER, 1918

RETURN TO
Roland Case Rose

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With 17 Illustrations — CHARLES M. SCHWAB

The War and Ocean Geography
With 7 Illustrations

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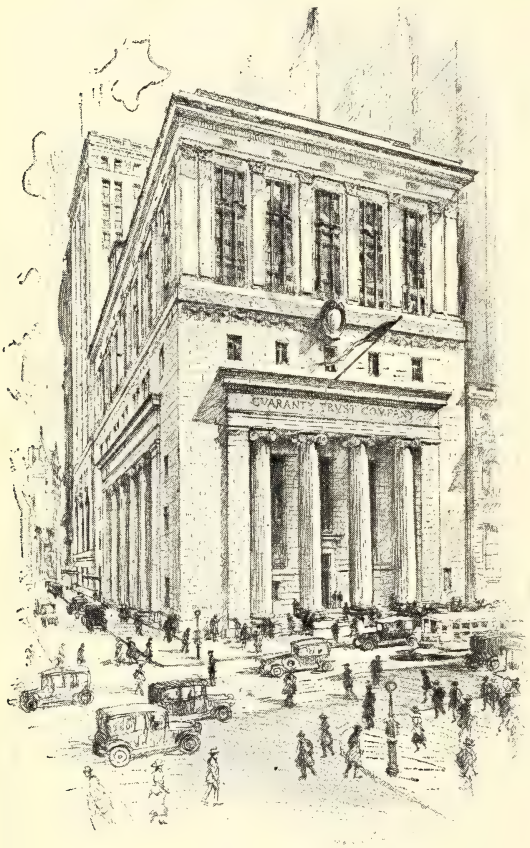

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Corn Puffs	Puffed Rice	Puffed Wheat

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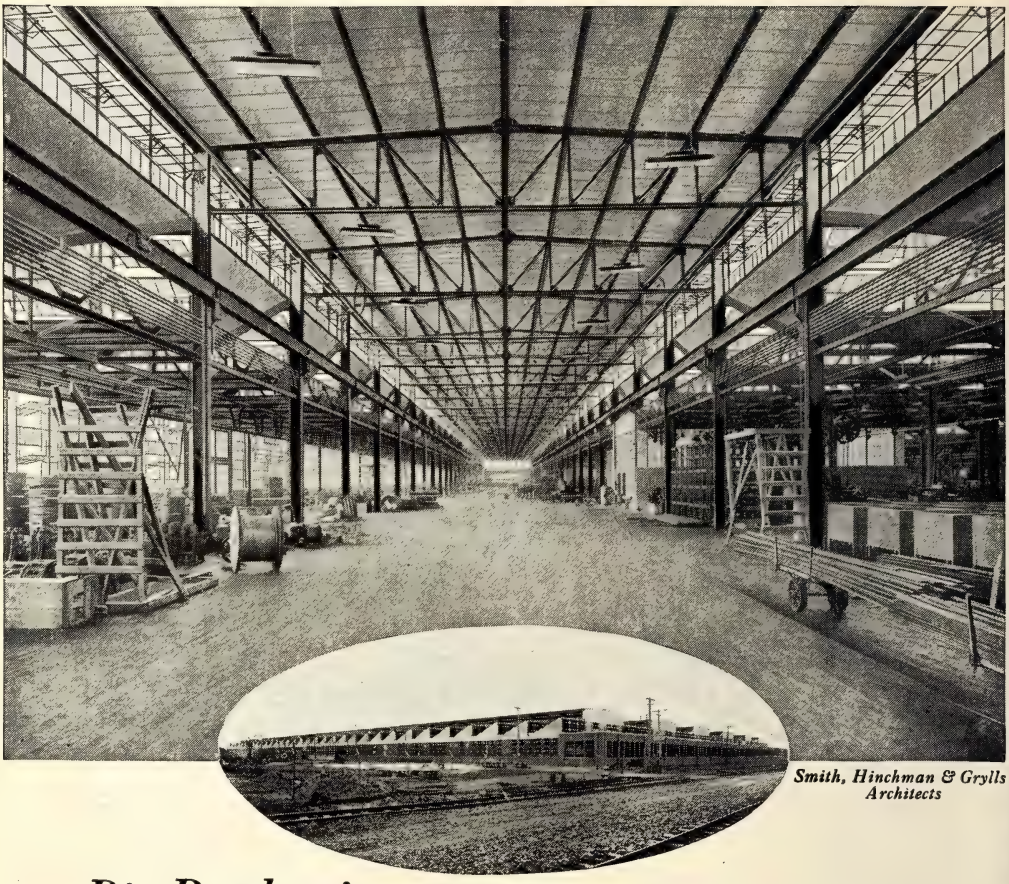
Sole Makers

(1988)



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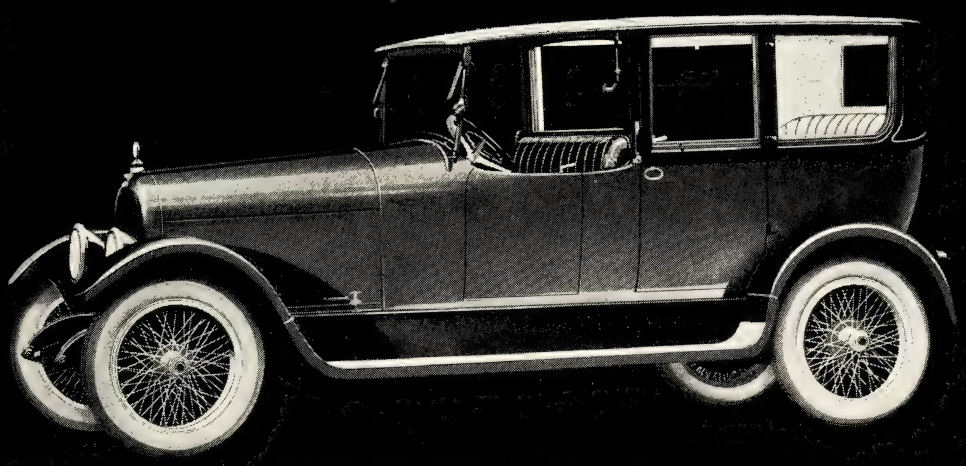

BOYS and mechanics aren't the only ones who have to get rid of obstinate dirt and stains.

If your hands are stained with ink or dye or grease, treat them to a bath in Goblin Soap suds—you'll be delighted.

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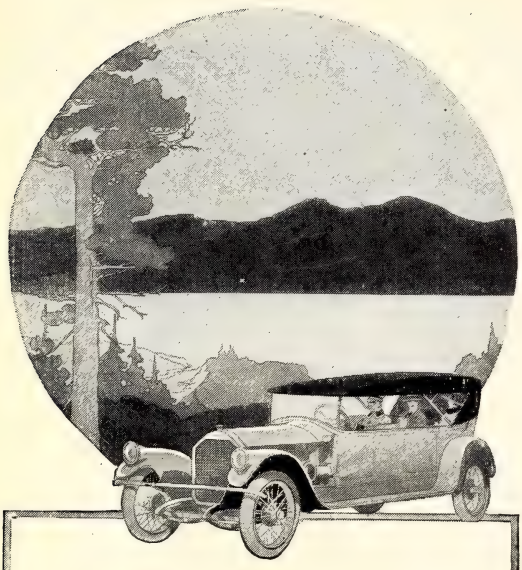

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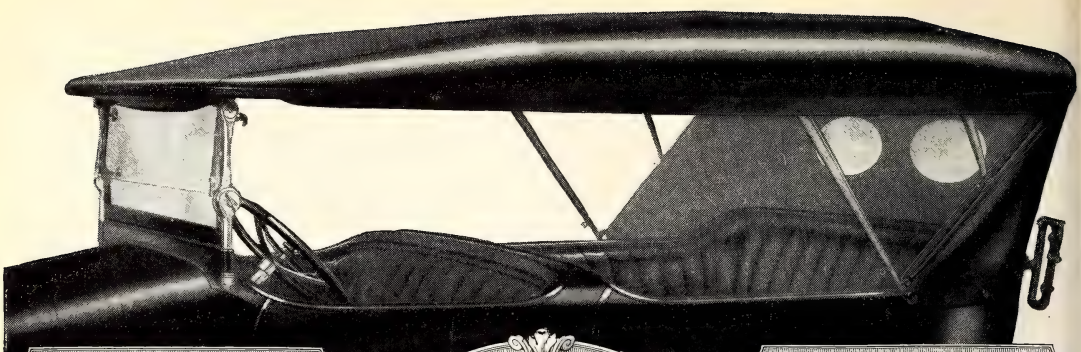

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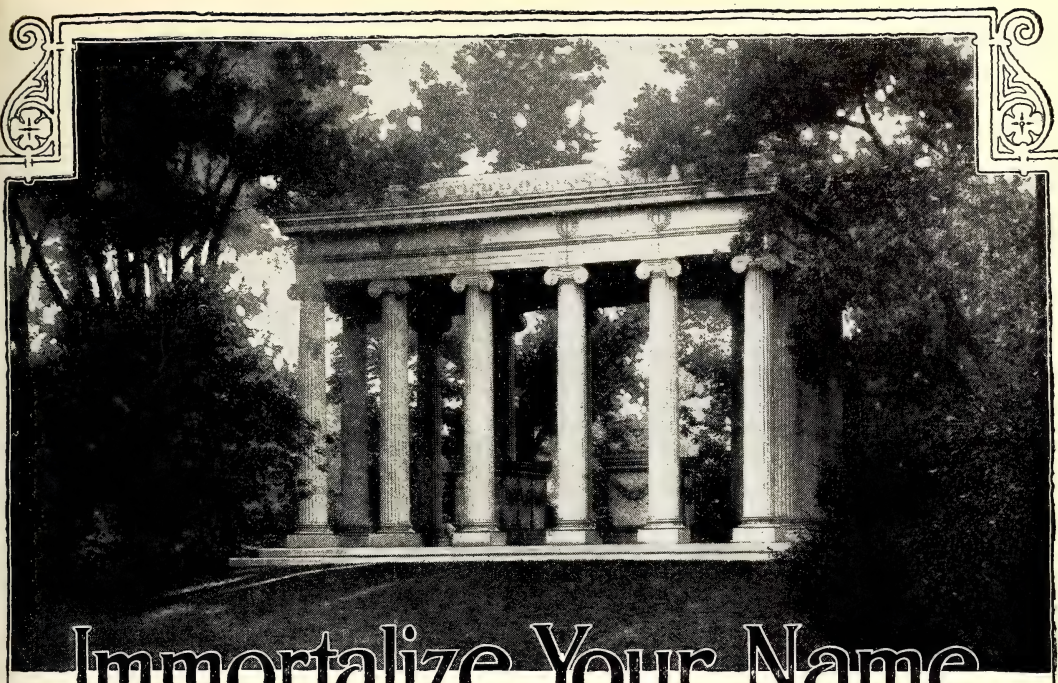

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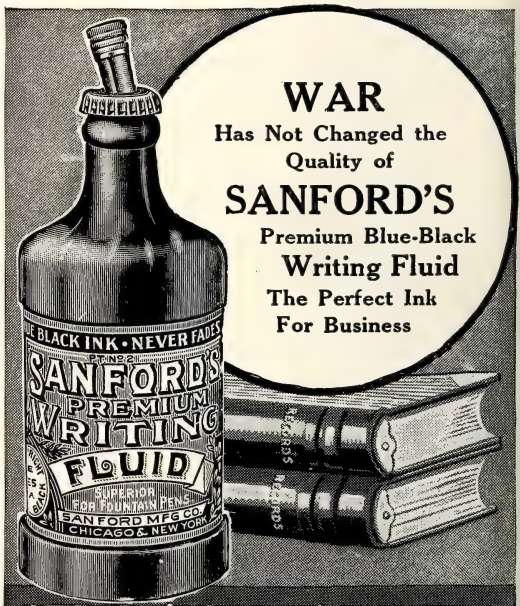

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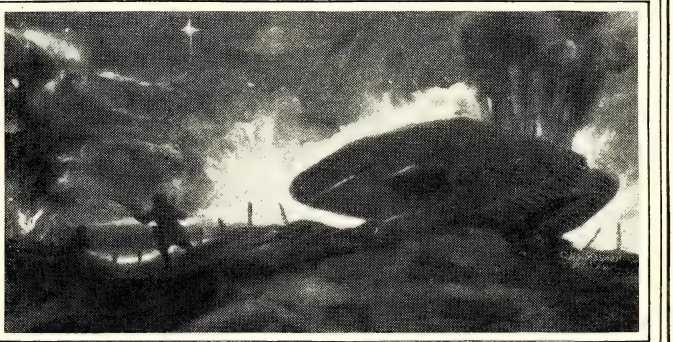

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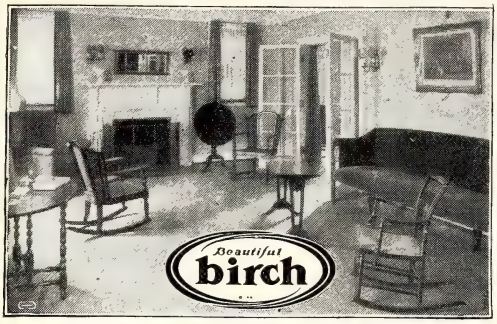

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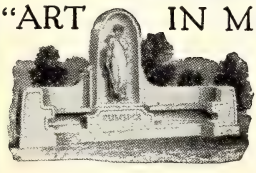

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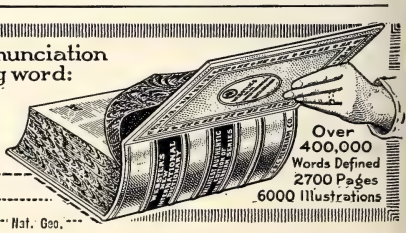

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THE NATIONAL GEOGRAPHIC MAGAZINE

SHIPS FOR THE SEVEN SEAS

The Story of America's Maritime Needs, Her Capabilities and Her Achievements

By Ralph A. Graves

Author of "Fearful Famines of the Past"

THE human mind cannot conceive of millions; to most of us even tens of thousands convey no concrete idea save that of a numeral and four ciphers. Let this, then, be a story of America's ships and American shipbuilding in the language of units.

Our merchant fleets, already created and those to be, are the great, pulsing arteries supplying our armies abroad with all that constitutes the life-blood of fighting forces—food, clothing, ammunition, machine-guns, artillery, locomotives, airplanes, ambulances, reinforcements!

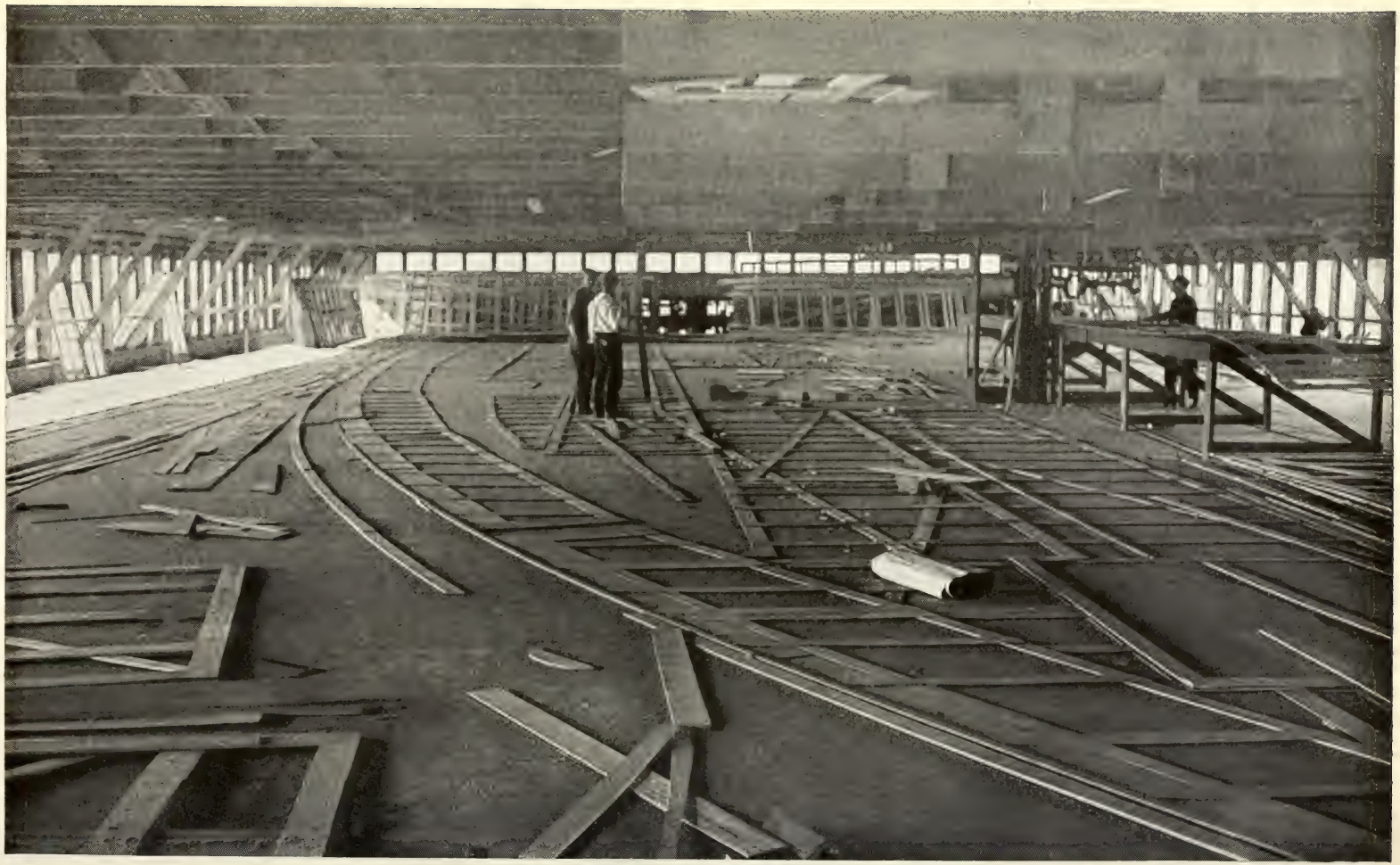
Ships in sufficiency spell victory. And to make that victory sure the American Government has authorized the United States Shipping Board to expend, as quickly as it can pay men for labor and material, a sum nine times as large as the value of all the gold and silver produced by all the mines of the earth during the year 1916; a sum nearly fifteen times as great as the cost of the Panama Canal; more than seven times as much as the original vast appropriation for our airplane program.

When that sum is exhausted as much more will be placed at the disposal of the Shipping Board, provided the ships are forthcoming in numbers never before built in the same length of time by any nation, or by all the nations of the world combined. Quantity of production, quality of production, and speed of production constitute the supreme aim of the shipbuilding program in the minds of Americans today; the cost is secondary and for subsequent consideration.

THREE TONS PER FIGHTING MAN

Why the quantity and why the haste? The answer lies in the historic fact that two million American soldiers are now in France fighting for the cause of a free world, and in the historic promise that by next July that number will have swelled to four million. *Every individual man of that army requires three tons of shipping to keep him supplied with the essentials of life and of effective warfare.* Not three tons of supplies, but three tons of shipping plying constantly back and forth across the Atlantic, month in and month out, through calm and storm, autumn, winter, spring, and summer. Every soldier—be he in base camp far behind the lines, in aviation training camp, in port of debarkation, in labor battalion, or among the shock troops of the front line—requires that three tons of shipping be set aside, consecrated to his particular needs.

Four million men in France, twelve million tons of shipping on the Atlantic—



WHERE THE WOODEN TEMPLATES OF A SHIP ARE MADE

A vast, well-lighted loft with a generous expanse of unobstructed floor space is required for the men who make the patterns by which the plates of a fabricated ship are cut, bent, and molded. Great care must be taken to prevent these patterns from swelling or shrinking, as the least deviation in the dimensions of the plates or in the position of the rivet holes means extra labor and consequent delay on the shipways.

the ratio is inexorable. The elimination of a single ton from that irreducible minimum will mean that some fighting man must go without the requisite clothing, food, medical supplies, or munitions of war that would make him 100 per cent effective against the Hun.

Nor is this ratio of three tons to one man a liberal estimate. At the beginning of the conflict the number of ship tons required for each man was as high as five or six—about the same ratio which Great Britain found necessary to keep her army of occupation on the arid Gallipoli Peninsula, where water as well as food and munitions had to be brought by ship. It is only through the genius of organization, of rapidly developing and developed efficiency in the handling of cargoes, both in our own loading ports and in French ports of discharge, and in the hurry-hurry-hurry impulse which actuates the master and crew of every ship at sea flying the American flag, that the tonnage per man has been reduced.

This ratio applies only to our men on the western front. If any considerable number of troops is dispatched to Russia or Siberia, the ratio of ship tonnage per man unit of those forces will rise to six, for the voyage from San Francisco to Vladivostok is twice as long, and two ships making eight round trips a year can carry no larger quantity of supplies than one ship making sixteen round-trip voyages. Of course, much of the foodstuffs required by our Siberian forces would be supplied from Australia, from the Philippines, and in some measure from Hawaii. Japan will be more or less busy keeping her own troops supplied, especially as she has already greatly depleted her shipping resources by charter to the United States.

SHIPS FOR THOSE AT HOME

When we have supplied the vital needs of our uniformed forces, there are the people at home to be provided for—the great army of a hundred million men, women, and children engaged in the essential industries, occupations, and pursuits of a nation at war. They, as well as the soldiers, must be supplied with the raw products of many climes—sugar and coffee and rubber from the tropics; nitrates, pyrites, manganese, sulphur, and other substances which go into the manufacture of war's engines of destruction; hides and wool, hemp and sisal, oil, meats and wheat to supplement our own stocks depleted by export to our Allies. All these and a countless number of other articles of food, clothing, and industry must come to us in ships. Ships! *Ships!* SHIPS!

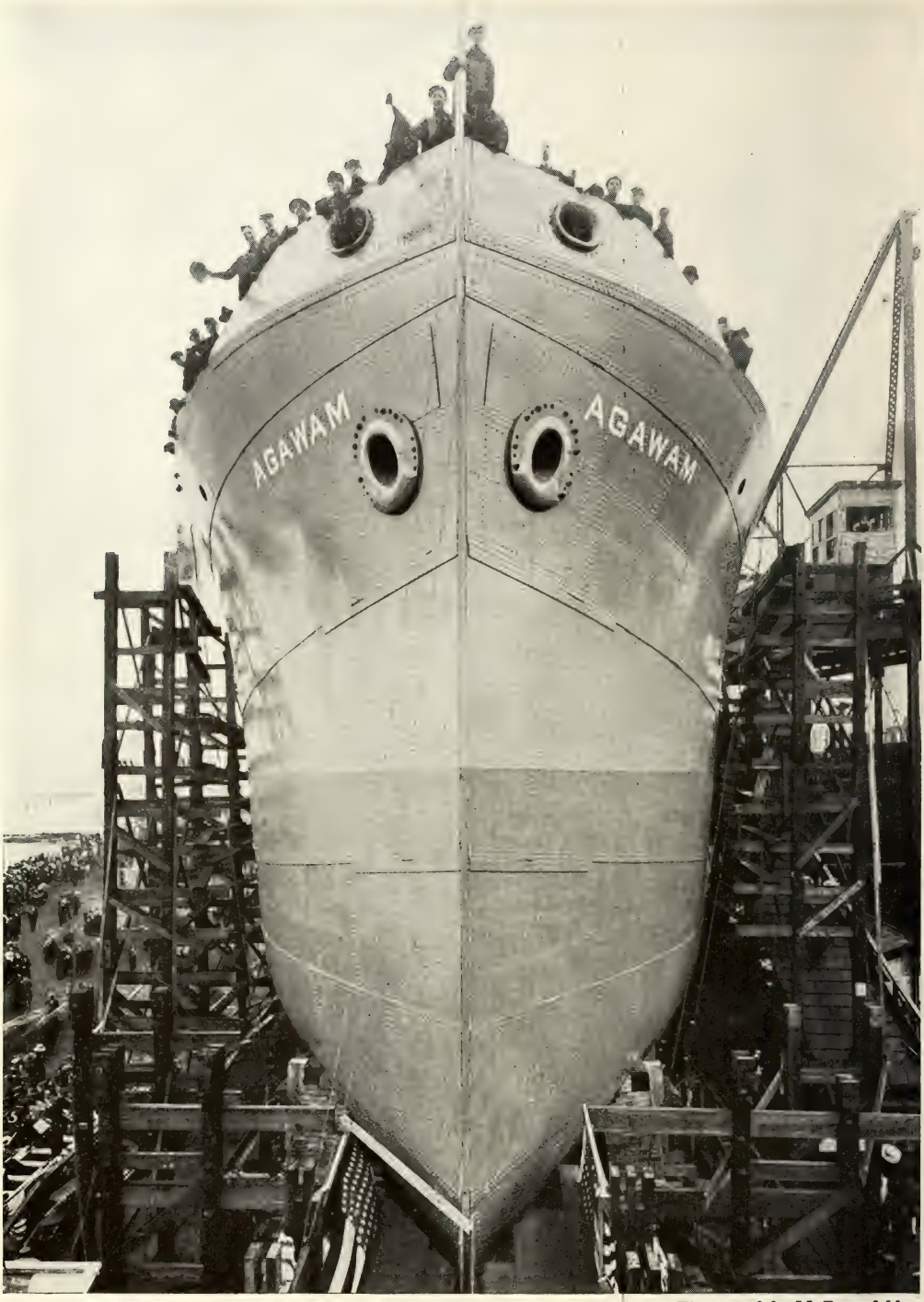
How, then, is the United States Shipping Board, together with its great auxiliary agencies—the Emergency Fleet Corporation, the Merchant Marine Recruiting Service, and the Port and Harbor Facilities Commission—supplying the nation's needs in the hour of its extremity?

The undertaking, beginning a little more than a year ago in abortive effort, misdirected energy, and chaotic confusion, which seems to be a natural law when any really great program is launched, has gradually evolved into order. The horizon of the immediate future is aglow with the promise of notable achievement.

THE INTRICACY OF SHIPBUILDING

In view of the speed which at last is being attained in the quantity production of ships, it is an excusable error on the part of the layman to assume that the construction of sea-going craft is a comparatively simple undertaking. As a matter of fact, most of us, when the imperative need for a vast American merchant fleet was suddenly realized eighteen months ago, looked upon ship-building with about the same nonchalance as the would-be airplane manufacturer who, in in the early days of the war, sought a contract from the government, declaring that he needed no special equipment for the undertaking, as he could "whittle a flying machine out of a piece of timber with a drawing-knife." Many people still imagine that a ship of wood, steel, or concrete is little more than a glorified row-boat.

In reality, the making of a ship is one of the most intricate achievements of industrial science, requiring the greatest nicety of calculation, workmanship, and correlation of parts. To cite a typical instance: So delicate must be the adjustment of machinery to hull that the shaft line (the location of the shaft which



Photograph by M. Rosenfeld

THE FIRST FABRICATED SHIP EVER BUILT

With the launching of the *Agawam* at the Submarine Boat Corporation's fabricating plant near Newark, N. J., on May 30, there was inaugurated a new shipbuilding method which promises to revolutionize ship construction for all time. Fulton's steamboat, the *Clermont,* on the Hudson; the *Savannah,* the world's first transatlantic steamship; the *Merrimac* and the *Monitor,* first ironclads—all were milestones in maritime history. And now comes the fabricated ship, also "invented and made in America."

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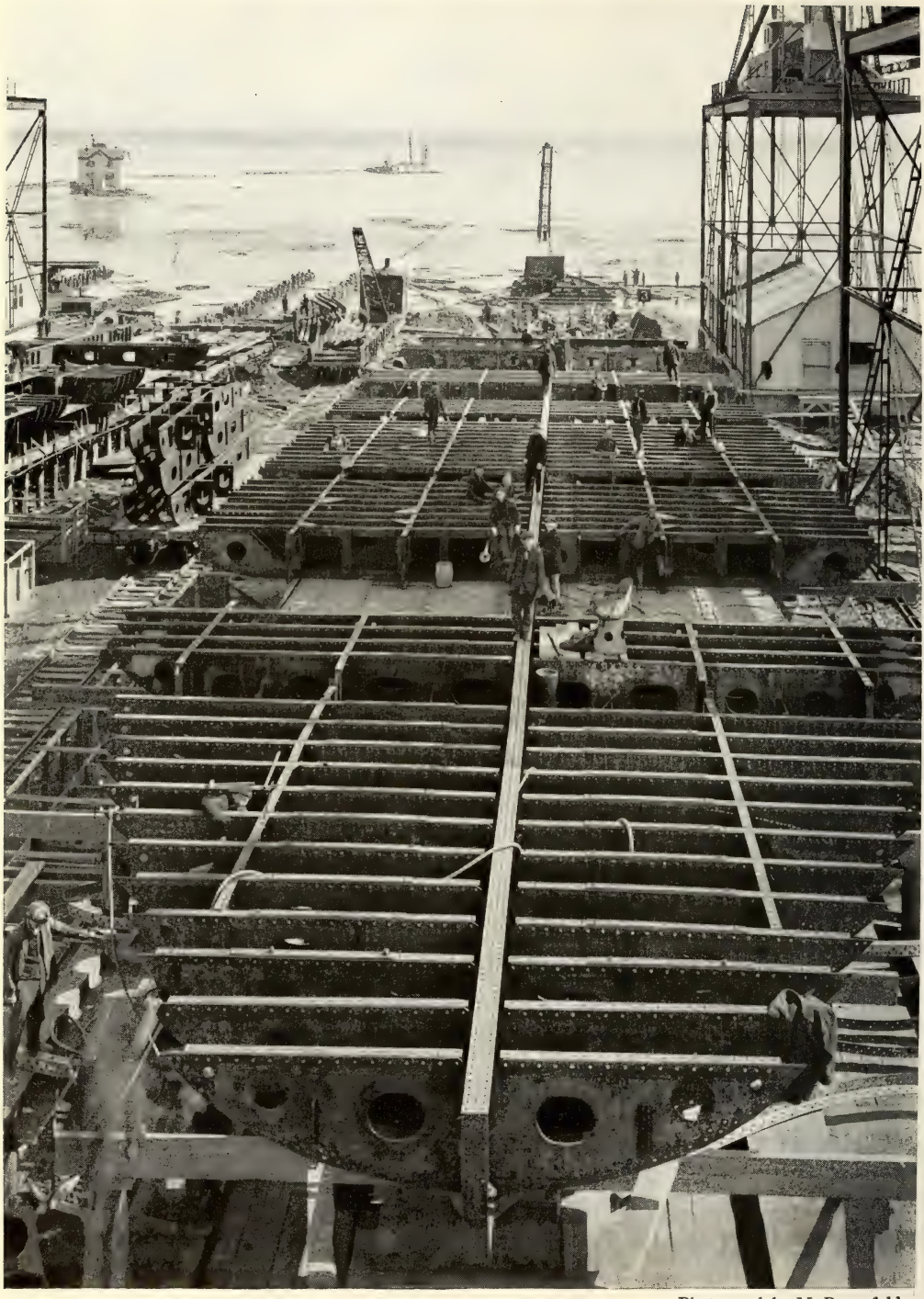
THE BEGINNING OF A CARGO-CARRIER

The keel having been laid, the keel plates and ribs are hoisted into position by the erectors who operate giant cranes. Much of the assembling work is done in the steel mills, where the plates and parts of the frame are made. In the left foreground are other assembled parts ready to be hoisted into position and riveted.



Photograph by M. Rosenfeld

HOW A DOUBLE-BOTTOM CARGO SHIP LOOKS IN THE COURSE OF CONSTRUCTION

Note the pile of bulkheads at the left assembled and riveted ready to be hoisted into place

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transmits the power from the engine to the propeller) must be run (its position fixed) between 11 o'clock in the morning and 2 o'clock in the afternoon; otherwise the expansion of the metal caused by the heat of the sun's rays shining on one side of the vessel more than the other would deflect the line from the correct position, resulting in disaster to the machinery on the trial trip.

THE FABRICATED SHIP

The widely heralded fabricated steel ship has been the source of much popular confusion. It is generally assumed that the steel plates are cut to a pattern by the hundreds, like the parts of ready-made clothing. After a fashion, this is true, for scores of steel mills and machine shops and 1,000 auxiliary plants, scattered throughout the country and employing a million men, are manufacturing the parts which go to make up our standardized fabricated steel ships, including their engines and boilers. But this does not mean that the thousands of parts which go to make up each vessel can be transported to the seacoast, fitted to pattern like a jig-saw puzzle, pinned together with a few rivets, and pushed out into deep water, a completed cargo-carrier.

The intricacy of "putting together" a fabricated steel ship cannot be more forcefully suggested than to review the groups of men employed in the undertaking.

The erectors and their helpers, with the aid of steam cranes, swing the massive keel, plates, and beams in place. The riveters, with their gangs—the men who heat the rivets to the exact temperature required, the men who pass these rivets from the forges to the riveters lying prone upon their backs between the inner and outer "skin" of the ship, or perched high upon a scaffold at bow or stern, and the "buckers-up" (those who with hammer or counter pneumatic machine press down upon and brad the glowing steel pins which the riveters drive into place with their rivet-guns, striking more than a thousand 95-pound blows to the minute)—bind the plates together. It is the riveter's responsibility if the hull is not watertight or if his rivets are unable to resist the constant buffet of waves and the throb of mighty engines urging the laden craft through heavy seas.

The task of the drillers and reamers is to alter the holes in the plates when they fail to match. Even the tailor-made suit needs a touch here and a stitch there at the first try-on, so it is not to be wondered at that the parts of a steel ship, made in many sections of the country, out of material which is seldom uniform, and under varying conditions of temperature, do not always fit. Where the holes are uneven they are made perfectly cylindrical by reaming, in order that the rivets may completely fill the space and thus avoid both a dangerous play of parts and subsequent leakage.

With both hand and pneumatic tools, the busy chippers trim off and smooth the edges of plates and castings, and when this work is done the calkers turn their attention to the edges of plates, angles, and rivet heads. Water must be kept out not only because of the immediate danger of ruining the cargo and sinking the ship, but also to avoid the insidious danger of small leaks that corrode the metal and in time cause serious structural weakness.

When the metal workers have completed their tasks the shipwrights install the wood decks, the wood foundations for capstans, winches, guns, and other parts. Theirs is the responsibility also for wooden masts, cargo booms and spars, and for launching ways. To joiners is intrusted the interior woodwork and state-room fittings.

Shrouds, stays, lifts, bracings for masts and funnels, life-lines, and all other wire and hemp rope rigging are installed by the "human flies" of the shipbuilding profession—the riggers.

Besides these experts employed on the ships themselves, there is a hurrying group of machine shop and foundry men — sheet-metal workers, plumbers, machinists, blacksmiths, drop forgers, electricians, and acetylene burners.

THE ARISTOCRATS OF LABOR

The coppersmiths deserve a paragraph to themselves, for they are among the aristocracy, the "400" of labor. Their number in America has been variously estimated at from 1,200 to 1,800. At the

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KEEL PLATES OF A STEEL MERCHANT SHIP: THE VERTEBRÆ OF ONE OF OUR CARGO-CARRIERS

The need for hurrying our shipbuilding program is being emphasized daily from scores of quarters. Not only must our growing armies in France be supplied, but we must continue to help feed our stalwart Allies. The Federal Food Administration announced recently that its shipment of foodstuffs to Europe during 1918 will total 10,000,000 tons, but that in 1919 this amount must be increased to 15,000,000 tons.

outbreak of the war many of them were engaged in making copper kettles and worms for breweries, alcohol stills, and turpentine plants. A large percentage of the brewery coppersmiths were either Germans or Austrians, and therefore could not with safety be employed in our shipyards; but the really American artisans were quickly mobilized for the essential labor of hammering out the copper kettles for our new ships' galleys, of rolling from sheet metal the vitally necessary copper pipes for all the parts of a ship's machinery that come in contact with salt water; then of installing those pipes. Working at forced-draft speed, for which they are paid from 85 cents to $1.50 an hour, two coppersmiths become pacemakers for 1,000 men working on other parts of a ship.

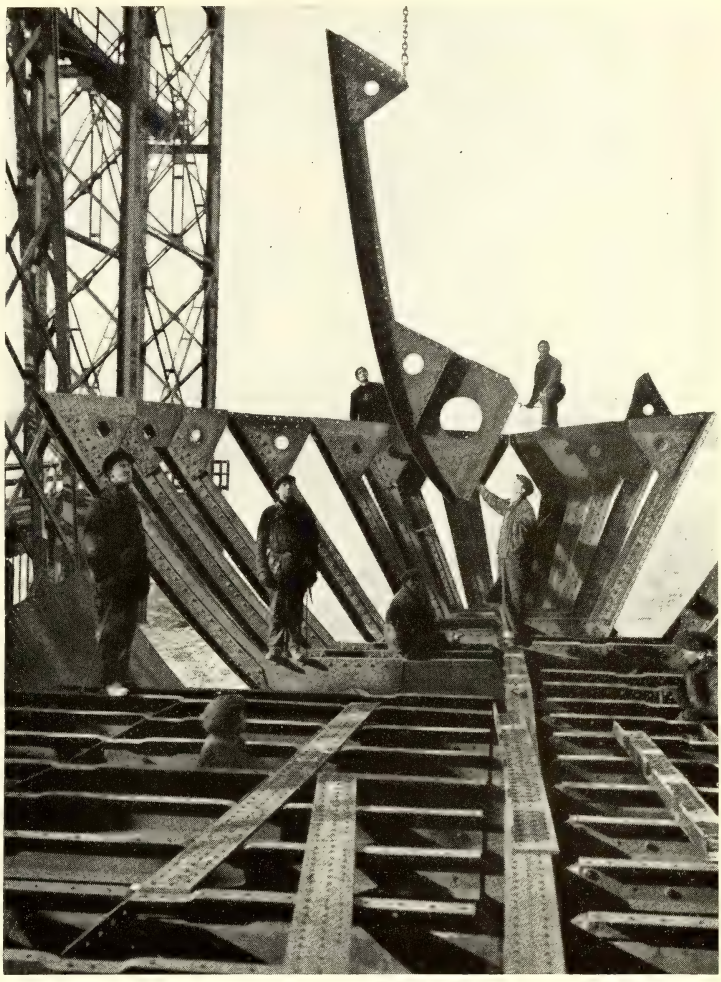
Before the steel plates of a ship can be rolled to varying thicknesses and cut to certain dimensions, be that ship fabricated or specially built throughout, two groups of artisans of great skill and long training must pave the way. These are the loftsmen and the shipfitters.

The labors of the loftsmen are of primary importance. To them come the plans of the ship designer, drawn to a small scale. It is the loftsmen's duty to translate those drawings into terms of a full-size ship.

These experts work in a great mold loft, ideally lighted and provided with a vast expanse of smooth flooring, suggesting a gigantic, low-ceilinged, rough-raftered dancing pavilion. Each plate of the future ship is represented in the molding loft by a template—a light wooden or

paper pattern, on which every rivet hole is marked, every curve and twist designated. With these templates for guidance, the various parts of the ship's hull are laid off, sheared, punched, planed, and bent. Upon the skill and thoroughness of the loftsmen depend in very great measure the speed with which a ship is built, the strength of its hull, and the economy of its construction.

Working in collaboration with the loftsmen are the shipfitters, who take the templates and mark off upon the steel plates the different parts of the hull. In some special instances the shipfitter works directly from his blue-prints without the aid of templates.



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BUILDING THE STERN OF A MODERN SHIP

When America suddenly awoke to the necessity of having ships in a hurry, it was the bridge-builders and those who had erected our steel skyscrapers, who proved to be the "men of the hour." The fabricated steel ship is an adaptation of the American bridge-builders' method of construction.

THE CAMOUFLEUR ARRIVES

Once the ship is completed, 60 per cent of the labor being represented in the hull and 40 per cent in the installation of the mechanical parts and the motive power, there comes upon the scene a corps of men whose profession was unknown before the war and for whom a name had to be invented by the French—camoufleurs, men who practice the art of concealment by protective coloration.

In the use of camouflage it has been found impossible so to blend a ship with horizon or seascape as to make it invisible; a phase of the art had to be developed which would effect an optical illusion confusing to the enemy observer.

Marine camouflage, instead of being a new art, is in reality the revival of a practice familiar to the Greeks and Romans at the dawn of the Christian era. They employed what today in modified and improved form is known as the "baffle" system of painting. It is the use of big splotches of color and wide bands of paint to distort the dimensions and shape of vessels to such an extent that an enemy at any considerable distance is unable to determine their size, their armament, or the direction in which they are going.

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THE BULKHEAD OF A FABRICATED SHIP SEPARATELY ASSEMBLED AND READY TO BE SWUNG INTO PLACE BY A STEEL CRANE

At the present rate of progress, it is predicted by officials of the Shipping Board that the normal tonnage of the world will be restored in the fall of 1922. But the requirements of the world after the war will be greater than ever before.

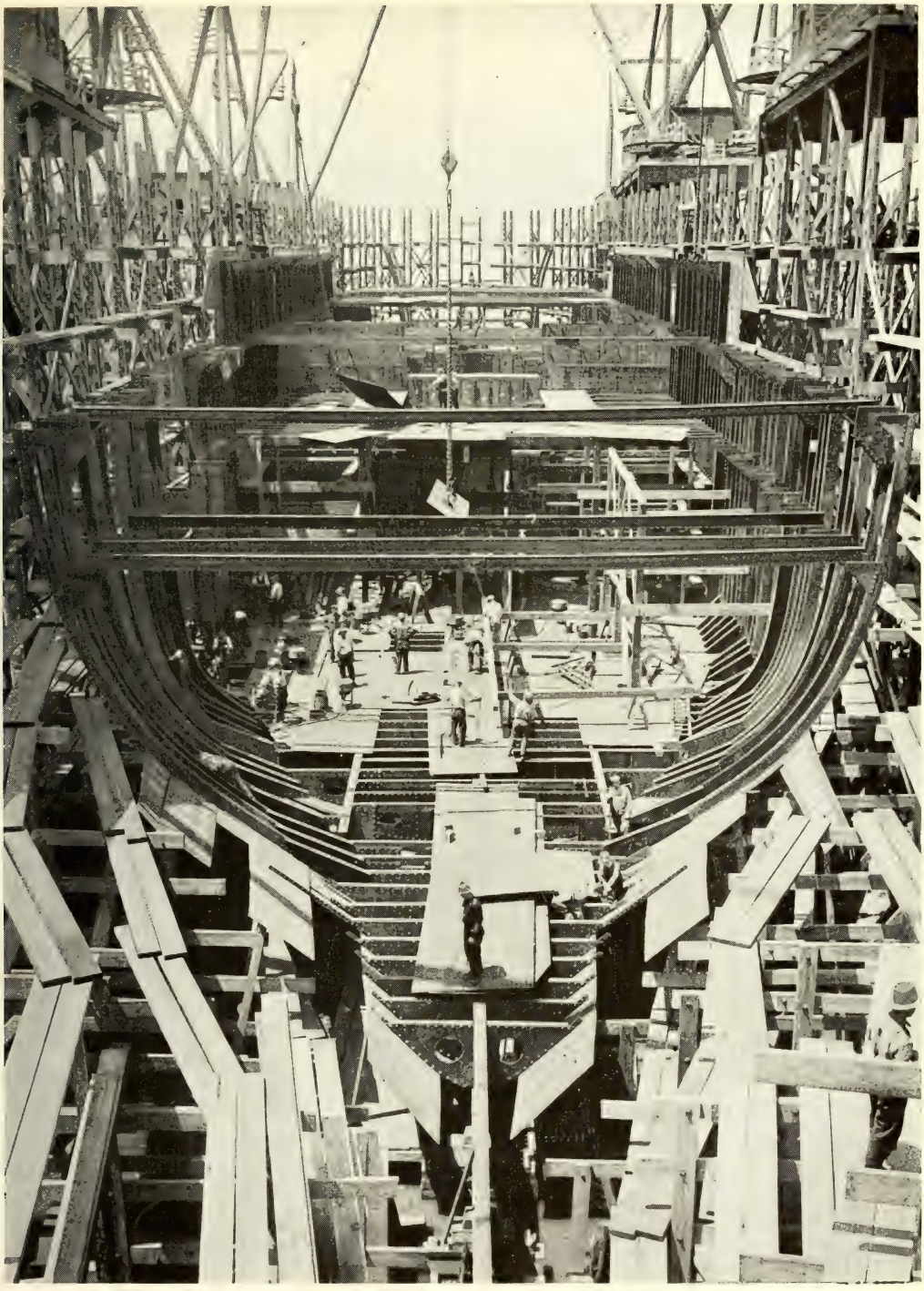
Credit for the adaptation of this ancient illusion method to modern needs is given to Lieutenant Commander Norman Wilkinson, R. N. V. R., a famous British marine artist. It is his "baffle" system which is employed on practically all the ships of the Allies, with modifications to meet the requirements of each type of vessel.

The work of camouflaging has been perfected to such nicety that a ship can be decorated with its particular pattern of streaks and stripes with astonishing dispatch. It is a matter of record that at one American port an 8,800-ton freighter was completely camouflaged in less than 24 hours. The district camoufleur was notified late Saturday afternoon that the vessel in question would be ready to sail Monday morning. By midnight Saturday the design for the ship had been selected and the pattern indicated on the hull and superstructure. With the arrival of necessary supplies at that hour, 62 painters were set to work and by 5.30 Sunday afternoon the ship was ready to defy the most keen-sighted commander of a Prussian U-boat.

THE RIVETER A POPULAR HERO

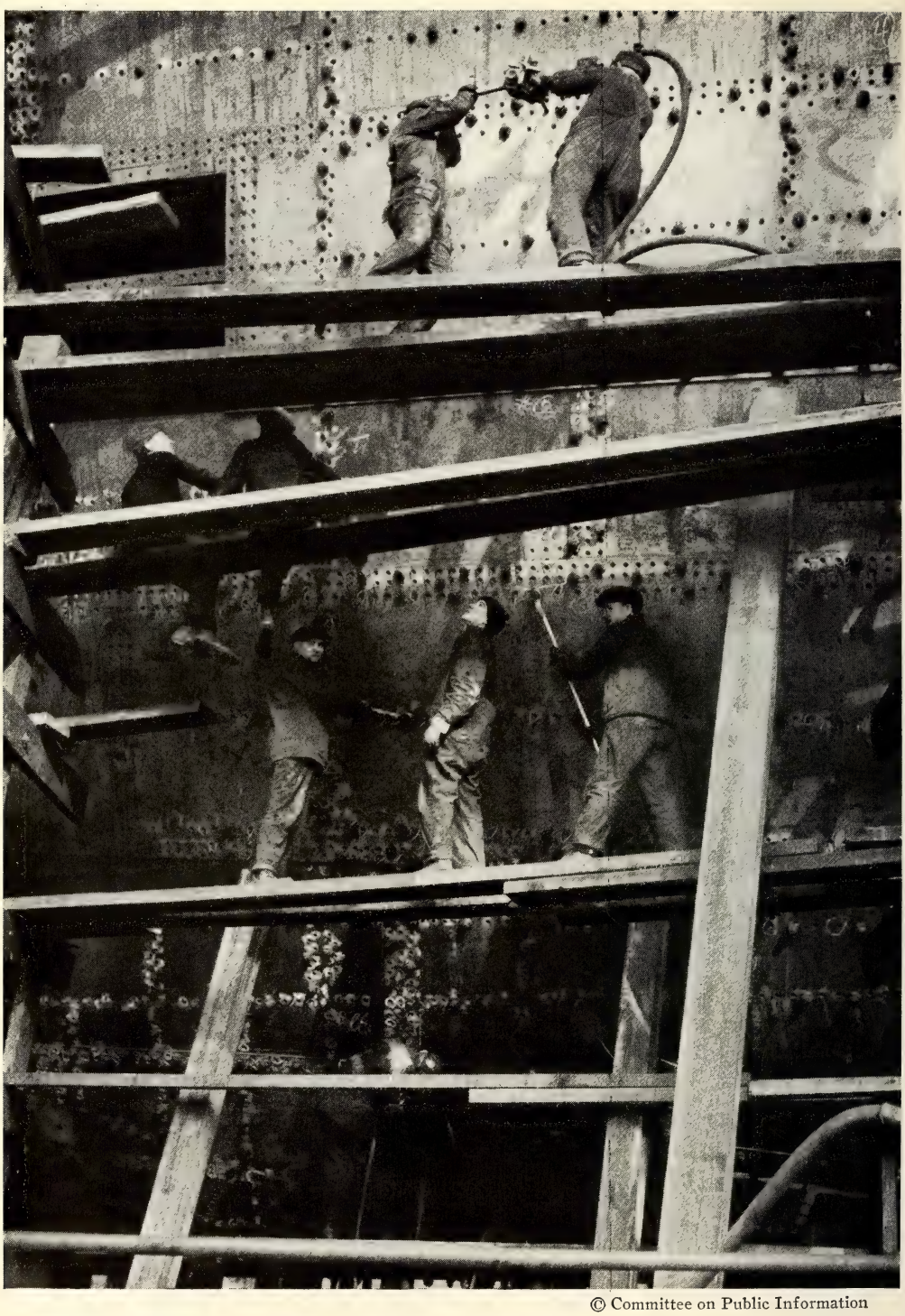
Of all the groups of workers engaged in shipbuilding none has succeeded in focusing public interest upon his particular task so much as has the riveter. The machine-gun staccato of his pneumatic hammer has come to be recognized as the magic song of the shipyards—a national anthem of industry.

The speed with which he sends his steel pins, heated to an orange hue, into place is taken as a criterion of the morale and efficiency of the particular plant in which he is engaged. The b-r-r-r-ratttt of the rivet gun is the mechanical equivalent of



THE SKELETON OF A STEEL SHIP

To keep the shipbuilders supplied with material, steel mills are working night and day in many sections of the country. During the month of July the Bethlehem Steel Company's plant at Reading, Pa., produced an average of a million rivets a day—enough for two steel ships every 24 hours. It requires 125 tons of metal for each day's rivet output at this plant.



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WORKING IN TIERS ON THE SIDE OF A FABRICATED SHIP

At the top may be seen the reamers, correcting slight discrepancies in the rivet holes. In the middle are two painters. On the third platform are the workmen who bolt the plates together temporarily while they are being permanently fastened by the riveter.

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Roland Case R177

man's slogan—"Speed up!" Hence the many riveting contests which were staged in every shipyard in the country until the concentration of attention on this particular branch of the industry threatened demoralization of the coördinate branches. But the riveter is still the hero of the hull in the eyes of the people.

Many have been the astonishing records of rivets driven in 8 or 10 hours, and a flood of controversy has resulted. Perhaps it is better to avoid disputation by omitting stellar single-day achievements. A clearer idea of the work actually accomplished may be gained from the recital of such records as that of one team in a Pacific Coast yard which drove an average of 697 rivets a day for 26 consecutive working days of the month, in every part of the ship. A thousand rivets a day is not unusual for certain parts of the hull, but 400 rivets a day for all gangs is a conservative estimate.

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REAMERS AT WORK BENEATH THE BOTTOM OF A SHIP

Their trade is to rectify the inaccuracies and mistakes of others. With the various parts of the ship made in many widely separated sections of the country, under a variety of conditions, the rivet holes of two plates to be joined frequently do not coincide properly. The reamers use their air-driven machine to rout out the holes so that the rivets may be driven home straight.

The riveter is permitted to choose whether he shall be paid by the day, at 70 to 80 cents an hour, or by piece-work (from $4 to $6 a hundred, according to the part of the ship in which he is riveting). If he is engaged in piecework he takes 44 per cent of the total, the bucker-up gets 33 per cent, and the heater of the rivets gets 23 per cent.

SCHOOLS FOR RIVETERS

So great has been the demand for riveters that it was impossible to supply them from the structural iron-work trades at the beginning of our intensive shipbuilding program. Schools for riveters were established, therefore, and these are still in highly successful operation in many yards. A man of the proper physique (he must be stalwart to stand up against the thrust of the hammer, whose lightning blows register 50 tons a minute) can usually learn to be a riveter in 10 days or two weeks, devoting from 8 to 10 hours a day to instruction

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MARKING OUT A PLATE WITH A TEMPLATE PREPARATORY TO PUNCHING RIVET HOLES

The pattern from which a ship's steel plates are cut and the rivet holes punched is called a template; upon the care with which it is made depends the speed with which the thousands of parts of a fabricated ship can be assembled.

and practice; but there is one case on record where a class of three men learned the art in 20 working hours of schooling.

While the riveter pupil is in the school the shipyard pays him 50 cents an hour. Something of an anomaly, this plan of paying a man for the privilege which is given him to learn a trade and equip himself for greater earning capacity! However, no inducement which can be offered is too great, provided the requisite number of competent workmen is obtained to accomplish the end in view.

WOMEN WORKERS IN THE SHIPYARDS

In surveying the varied activities of the ever-increasing army of men engaged in shipbuilding, the observer or correspondent making a tour of the firing lines of industry is apt to think of woman's share in the vast undertaking as purely decorative, her presence being essential only when the bottle of christening wine is to be broken upon the vessel's bow as

"She starts—she moves—she seems to feel
The thrill of life along her keel,
And spurning with her foot the ground,
With one exulting, joyous bound,
She leaps into the ocean's arms."

Before this war that was woman's sole prerogative in the shipyard—sponsorship at a launching. But in these days patriotic service knows no distinction of sex, and wherever woman can help she is to be found by man's side sharing his burdens and responsibilities. The shipyard is no exception.

Among the clerical forces in the administration buildings and as nurses in the hospitals of the 203 shipyards, the women workers are finding their most abundant opportunities to lend a hand in the construction of the "bridge of ships" across the Atlantic; but they are to be

found toiling with the manual laborers, too, just as are the women of Great Britain.

It is at oakum spinning, preparing the material used by the calkers in sealing the ship's seams to prevent leaks, that feminine hands are most frequently employed. In a Gildersleeve, Conn., shipyard there is Miss Anna Lackman, who after a few weeks' practice was spinning half a bale more oakum a day than any man in that yard had ever spun. Down in Houston, Texas, there is one of 40 women oakum spinners who, in order to begin her nine-hour task in the shipyard by seven o'clock, has to get up at 4.30 every morning and travel 15 miles to her job. Her cheerfulness in the face of hardship is an inspiration to all the men in the plant. At the other end of the country, out in Vancouver, Wash., Mrs. G. R. Underwood is leader of a gang of calkers. She explains her enthusiasm for her work by the fact that she has given her two sons to her country, both being in France fighting for the sanctity and safety of her home.

A few days ago the president of the shipyard in which she was employed observed that Mrs. Underwood looked tired and fagged.

"It has been a rather hard day," she admitted, "but I am all right and there is enough oakum on hand to keep the calkers busy."

Upon investigation it was found that her four assistants had failed to report for work that morning; so she, single-handed, had manned the machines all day and kept the supply of oakum strand running steadily out to the men in the yards.

Such is the spirit of the women workers of America in our shipyards!

THE SHIP NEEDS OF PEACE

In order to understand and appreciate the task which lies before the American shipbuilder, it is first necessary to know the amount of merchant shipping which was employed in meeting the ordinary demands of peace, the amount which has been destroyed since the beginning of hostilities, and the rate at which shipyards have been launching sea-going craft during the last four years.

In the year 1914, before the Hun ran amuck, the world's water-borne trade was carried in 30,500 vessels of more than 70,000,000 deadweight tonnage.* Of that international fleet more than one-third sailed under the British flag. The United States stood second among maritime nations, with something less than one-eighth of the total tonnage, while Germany ranked third, with a little more than one-tenth of the total. But while most of Great Britain's and of Germany's ships were engaged in foreign and colonial trade, only one-fifth of America's ships belonged to that class. Vessels that flew the Stars and Stripes in foreign ports before the war totaled less than one-fortieth of the world's tonnage.

Since August, 1914, the world of commerce has lost 21,500,000 tons of Allied and neutral shipping—more than one-third of the sea-going tonnage existing at the outbreak of the war. The major portion of this loss is directly attributable to the German submarine, the remainder to normal depreciation, storm, fire, collision, and wreckage.

During these four years the Entente nations, the United States, and neutral

* While it is the custom in official reports of maritime nations to employ the term "tonnage" as meaning gross tons, unless otherwise specified, the former chairman of the United States Shipping Board in his public announcements employed deadweight tonnage as the standard. To avoid double confusion, the deadweight-tonnage standard has been adhered to by the present officials of the Board, and in this article the deadweight standard of measurement is meant. While there are many kinds of tonnage, the three principal standards are the gross, the net, and the deadweight. Gross tonnage expresses in units of 100 cubic feet the entire cubical capacity of a ship, including spaces occupied by cabins, engines, boilers, and coal bunkers. Net tonnage expresses in units of 100 cubic feet a ship's capacity after deductions have been made for cabins, machinery, etc. Deadweight tonnage is the maximum weight of cargo, bunkers, consumable stores, passengers, and crew—a ship's weight-sustaining capacity. For all practical purposes, the deadweight of a ship may be derived from the gross tonnage by adding 50 per cent to the latter—that is, a vessel of 1,000 gross tonnage is reckoned as having a deadweight tonnage of 1,500. The net tonnage is dependent upon many factors and cannot be so readily determined either from the gross or deadweight tonnage.

powers have made good two-thirds of that shrinkage (14,000,000 deadweight tons) by the construction of new ships, and have further added to their merchant-fleet assets by taking over 3,795,000 deadweight tons of enemy shipping, either captured on the high seas or seized in Entente and American ports. Thus, deducting the new shipping and the seized tonnage, the commercial world, exclusive of Germany and Austria, has suffered a net shrinkage of a little less than 3,500,000 tons in four years, due to the "spurlos versenkt" creed of ruthless Prussianism.

Three and a half million tons does not represent the full economic loss to allied and neutral commerce, however, for had the world remained at peace and shipbuilding continued as during the years immediately preceding the war, there would have been an increase of more than 14,500,000 tons instead of a net loss.

THE SHIPPING BOARD'S PROGRAM

In order to erase that "overdraft" of 3,500,000 tons of shipping and establish a credit balance on the ledger of sea-going vessels, the United States has launched upon the most extensive and most ambitious building enterprise ever conceived by a maritime nation. The complete program of the United States Shipping Board on September 1, 1918, provided for 2,249 contract ships of wood and steel, having a deadweight tonnage of 13,212,712; 32 concrete ships of 301,500 deadweight tons; 402 requisitioned ships of 2,790,000 tons, making a total of 2,693 sea-going vessels aggregating 16,305,004 deadweight tons, besides 170 barges; 279 steel, wood, and concrete tugs; 100 trawlers, and 25 harbor oil barges.

It will take many months to complete so vast a program—how long no one in authority will dare predict. Promises and prophecies are alike taboo in shipping circles, but there is no ban on making public the work already completed, and he who cares to hazard a guess or an estimate based on accomplished facts is welcome to do so. Let us see.

WHAT HAS BEEN DONE

Before the United States entered the war, our record shipbuilding year showed a production of 285,000 deadweight tons of ocean-going steam vessels of 1,500 deadweight tons and over; during the 31 days of August, 1918, the deliveries to the Shipping Board from American shipyards amounted to 313,380 tons of ocean-going steam vessels—in *one month* of war-time effort a production 10 per cent greater than that of the banner *twelve months* before we began to fight.

That August shipbuilding record is one of which the nation may well feel proud, for it overtopped by more than 17,000 tons the best month of any year in British shipyards. But these figures are merely the cheerful beginning of far greater accomplishments, if all goes well. Our shipyards are not ever yet all in production.

In August, 1917, America had 37 steel and 24 wooden shipyards. In August, 1918, we had more than double that number of steel yards and nearly five times as many wooden yards as we had 12 months previously. Today we have 410 completed shipways for steel ships and 63 yet to be finished; 400 completed wooden, composite, and concrete shipways and 54 under construction or to be added—a total of 927 shipways under the supervision of the Emergency Fleet Corporation. It is conservatively estimated that each shipway, when operating with a full shipbuilding crew, should launch annually three ships averaging 6,000 tons each. It is further estimated (not predicted or promised!) that with 751 of our 927 ways used for the construction of cargo ships 13,518,000 deadweight tons should be produced annually when our shipyards attain their full development.

A CONSERVATIVE PREDICTION

Such prospective achievements tower so tall as completely to overshadow accomplished facts; yet the great gap between what may be done and what has been done to date should not discourage, but rather inspire the nation to redoubled effort. The actual deliveries of sea-going vessels of more than 2,500 tons by American shipyards to the Shipping Board during the first eight months of 1918 was 1,626,052 deadweight tons—a most encouraging record when it is realized that this exceeds by 80,000 tons the total production of vessels of more than 150 tons

during the same period by all the shipyards of the United Kingdom, hitherto the world's premier shipbuilding nation.

Thus far, our shipbuilding activities might well be compared with a ship on the ways a few moments after the confining braces and stanchions have been sawn asunder. The great craft is slowly gaining headway and it is sweeping irresistibly forward. The total production for 1918 will be more than 3,000,000 tons; Charles M. Schwab, director general of the Emergency Fleet Corporation, overcoming his reticence with respect to prophecy, has himself predicted it.

Between August 30, 1917, and August 31, 1918, our American shipyards delivered to the Shipping Board 325 completed ships, aggregating a few thousand less than two million tons. On July 4th of this year 95 steel, wood, and concrete ships were launched, representing a deadweight tonnage of 475,000, and that month showed a total launching of 126 vessels of 634,000 tons—more than double the tonnage launched in any one month by any other nation in the history of the world.

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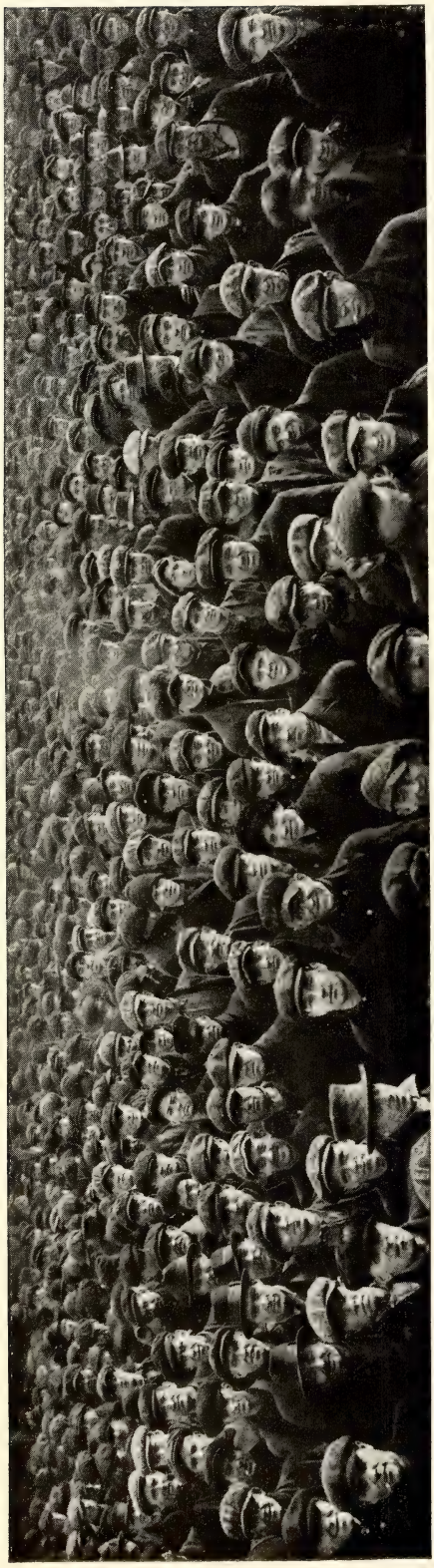
MARKING OUT A SHIP'S SIDE PLATE FOR THE PUNCH

This work can be done in a score of industrial centers, and when it is finished the plate is sent to the shipyard, where it is put in place by the erectors and "sewed" to the hull with steel stitches in the form of rivets.

America is not relying solely upon the production of her own shipyards. Japan has been commissioned to build 45 steel vessels for the Shipping Board, and the first of these, the 9,000-ton cargo-carrier *Eastern Sun,* reached our shores and was placed under the American flag in June. In addition to the ships now being built by the Mikado's people, 23 of their steel vessels of 145,000 tons have been chartered by our government.

THE SHIPPING BOARD'S GREAT FLEET

Of course, a great addition to our merchant fleet came in the taking over of enemy-owned vessels, 100 in number and aggregating 644,000 tons. The 81 commandeered Dutch ships also added nearly half a million tons, while 878 ships belonging to foreign governments, but now



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THIS IS THE TYPE OF MEN WHO COMPRISE AMERICA'S INDUSTRIAL ARMY OF 400,000, WHICH IS FIGHTING THE HUN WITH STEEL PLATES AND GLOWING RIVETS

under charter to the Shipping Board and to American citzens, have added two and three-quarter million tons.

These accretions, together with new ships delivered, American ships requisitioned, lake steamers converted into seagoing craft, and American merchant vessels not yet requisitioned but at its disposal, comprise a fleet of 2,185 vessels over which the United States Shipping Board has or may exercise jurisdiction—a total of more than nine and a half million deadweight tons.

It must be borne in mind, however, that this does not represent the tonnage which we can utilize for the support of our armies in France. For these ships there are many needs, some of which vitally, even if indirectly, affect the maintenance of our troops abroad

We are still far short of the tonnage required, and in meeting that shortage the details of our magically revived shipbuilding industry come into view.

In the yards devoted exclusively to the construction of merchant ships there is employed today an army of riveters, erectors, reamers, heaters, calkers, painters, designers, machinists, pile-drivers, carpenters, shipwrights, riggers, coppersmiths, plumbers—in all the representatives of 30 trades. It is an army numbering as many souls as there are men, women, and children in war-time Washington—400,000 And the weekly payroll of that army is nearly $11,000,000. At that rate, in one year our shipyards will pay out in salaries and wages alone a sum exceeding by $100,000,000 the total annual gross revenue of every State in the Union.

But the game is worth the candle! We pour millions into the shipyard hoppers, and cargo-carriers glide down the ways with a rapidity which would have been pronounced wholly beyond the realm of possibility eighteen months ago.

THE STORY OF THE TUCKAHOE

Take the case of the 5,500-ton freighter *Tuckahoe*. Just 37 calendar days from the hour when its keel was laid it was declared ready for service. Launched at Camden, N. J., in 27 days, fitted out in 10, it was loaded with 5,000 tons of coal in Baltimore on the 40th day after its keel-laying, and began its amazing career

as a cargo-carrier to Boston, setting a pace of four round trips a month between the Maryland and Massachusetts ports. It is a record which cannot but thrill the most phlegmatic.

The *Crawl Keys,* built on the Great Lakes, even betters the *Tuckahoe* record by three days, but it is a smaller vessel—3,500 tons. It was launched in 16 calendar days and placed in commission 18 days later.

One of the most spectacular achievements of the Emergency Fleet Corporation, the ship-manufacturing branch of the United States Shipping Board, was the launching of the 12,000-ton *Invincible,* at the Bethlehem works, Alameda, Cal., 23 days and 23 hours of working time from the moment of keel-laying. In the construction of this vessel, which is more than 457 feet long, with a beam of 56 feet and a depth of 38 feet, 1,500 shipbuilders, working in three 8-hour shifts, handled 137 tons of erection steel every 24 hours, and 100 riveting crews scored a daily average of 40,000 rivets driven home.

THE PACE-SETTING SHIPYARD

While these three ships mark the highest of the high lights in our building efforts, the honors for sustained performance over a long period go to the shipyard of Skinner & Eddy, of Seattle, Washington. With only five ways, on which an average of 4,527 men have been employed, this firm delivered to the Shipping Board during the eleven and a half months ending September 1, 21 steel cargo-carriers of 194,000 tons. Eight of the contract steel vessels, which have been delivered to the Board in less than 100 days from the time of keel-laying, have come from this plant, which has been producing ships at the rate of a little more than an eighth of a ton per man for every day in the year. At that rate it would require only 225 of the 751 cargo shipways now in existence in this country to produce 10,000,000 tons of ships in twelve months, with 250,000 men employed.

These speed records do not assume their proper significance until it is recalled that prior to 1914 the time ordinarily required for the completion of a 7,000 or 10,000 ton cargo-carrier was from 9 to 18 months; frequently two years.

MOBILIZING MAN POWER

How the government is solving the problem of mobilizing its man power for all the essential industries of war, and especially for the shipbuilding and munition plants, is a major story in itself. It can only be suggested here.

Through a remarkable campaign of publicity in the lay press, in labor journals, by means of striking posters, and by the employment of an industrious army of labor scouts, a host of skilled workmen has been recruited for the 203 shipyards. Many of these workers had never seen a ship when they walked into the employment offices. Some of these recruits proved irremediable misfits, but the great majority have made good the claim that the American workman has more mental alertness and greater adaptability than the manual laborer of any other nation on earth.

The process of recruiting is still going on and will continue to the end of the war and after, for our output of ships, shells, airplanes, and all the other machinery and material of modern warfare is limited not by raw products but skilled man power.

The United States Employment Bureau, recently organized as an adjunct of the Department of Labor, is still progressing with the slowness of an infant organization, but the encouraging fact remains that it *is* progressing. In its efforts to mobilize labor for the industries most in need of skilled workmen—of which the shipbuilding plants are among the chief—it has sought and is receiving the cordial support of union labor. Occasionally there are differences which threaten a temporary divergence of aim and dissipation of energy, but on the whole the plans are bearing fruit.

THE COMMUNITY LABOR BOARD

One of the agencies through which the Bureau is now working is the Community Labor Board, established in the principal industrial centers throughout the country. It is composed in each instance of three members—one representing the community's employers, the second its

Photograph by Paul Thompson

OXY-ACETYLENE WORKERS CUTTING STEEL PLATES

The oxy-acetylene flame and the electric arc have been potent factors in supplying the United States with tonnage Through their use the machinery of the damaged interned German ships was quickly repaired. Recently there was launched on the southern coast of England a steel vessel built without rivets Instead of riveting and calking the plates, they were joined in one process by electric welding. It is computed from the results obtained on this experimental ship that a saving of 20 per cent could be effected in both time and material if the welding process were to

employees, and the third, who is the chairman, the United States Employment Service.

It is the purpose of these boards to supervise the recruiting and the distribution of workers for war production. If they fulfill their important mission, it is hoped that they will be able to counteract one of the abuses in the shipyards of which many executives are complaining—the practice of one yard endeavoring to induce another yard's workers to leave their present employer and join the forces of the proselyting plant. This practice has become so flagrant in some communities that the heads of industrial relations departments find it necessary to keep secret-service men stationed at their own gates in order to detect the employment agents of rival concerns. In several places incipient riots have been narrowly averted as the result of these practices.

MAINTAINING MORALE IN THE SHIPYARDS

After workmen have been mobilized from non-essential occupations and dispatched to the shipyards, one of the most important tasks of the Emergency Fleet Corporation is to induce the men to continue on their jobs, working with 100 per cent efficiency—in other words, to inculcate and maintain morale in the plants.

Every important yard in the country today has its director of industrial relations—the man who is responsible for the morale of the men. Upon the shoulders of no other individual in a yard rests a greater responsibility than upon this director.

He employs a thousand devices to add to the comfort and insure the contentment of his men and to spur them on to the greatest possible effort. The four-minute patriotic speakers; the concerts by a band composed of shipyard workers; the admirably edited and attractively illustrated weekly newspaper, issued at all of the larger yards and distributed gratis among the men; the ably managed cafeteria; the completely equipped grocery store, where foodstuffs may be purchased at the smallest possible margin above wholesale cost; the hospital equipment and the sustained effort to inculcate the principle of safety first; the efficiency and courtesy of the uniformed military police, who protect the yard from criminal outrages of enemy aliens; the detective force, ever vigilant to discover the first signs of insidious enemy propaganda or sabotage among the men—all these and many more are cares which directly or indirectly are the responsibility of the head of the industrial relations department.

Charles M. Schwab is an industrial relations man. His official title is Director General of the Emergency Fleet Corporation; but it is due not so much to his ability as a "captain of industry," in the sense of an office organizer, that America is indebted for the immediate success which signalized his entrance into the work of building the nation's ships. It is to his flashing genius as a creator of morale among workingmen, of whom he was once one, that we owe much of the rapid advance of the building program.

When the history of America's titanic efforts as a shipbuilding nation in time of war comes to be written, the broad and unselfish vision which prompted Edward N. Hurley, chairman of the Shipping Board, to choose a colaborer of Mr. Schwab's caliber for head of the Emergency Fleet Corporation, will command universal admiration. Instead of dividing the glory of the accomplished task between them, Mr. Hurley and Mr. Schwab multiply it, for the work of each is equally essential to complete fulfillment of the country's needs.

CUTTING DOWN THE TURN-OVER

One of the most serious problems which has been encountered in the effort to maintain and elevate the morale of the shipyard workers has been the enormous change in the personnel of the working force from week to week—the turn-over, as it is called. At one time, at the Hog Island plant—the largest shipyard in the world, with its 50 ways, employing more than 30,000 workmen—more than seven times as many new laborers were enrolled each week as remained on the payroll on Saturday night. Not only was this vast shifting army of so-called workers demoralizing to the men who could be induced to remain on the job, but they constituted a discontented crew, spreading throughout the land a tale of dissatisfaction which kept other workers from

applying for employment at this great industrial institution.

How that condition has been combatted and successfully corrected at Hog Island is one of the really big industrial achievements of the war. Today, instead of being a "horrible example" for every other shipyard in the country, the Hog Island Labor Control Office is fast making that yard a model not only for shipbuilding plants, but for steel mills, munition and ordnance factories as well.

The basic idea of the Labor Control Office is one of great simplicity—the treatment of the workman as an individual, not as one of a mob. Nowadays every man who applies for work at the Hog Island yard first passes through the Labor Control Office, where his qualifications are recorded. He is told that he can quit his job whenever he pleases, but that before he draws his last day's pay he must leave the yard through this same office and confide to some one why he doesn't wish to remain.

Every workman, whether he be a coppersmith earning $1.50 an hour or the lowliest water-carrier or rivet passer, making only a little more than that amount a day, has the privilege of coming to the Labor Control Office and airing his grievance, whatever it may be. The time that he loses in making his complaint is paid for just as if he were working. It is costly to the yard, for many of the grievances are petty in the extreme; but it is far less costly than to have that army of discontented workers quitting every day and spreading their discontent elsewhere.

One of the most effective methods of eliminating grievances has been the selection of a corps of intelligent workmen to patrol the yard as investigators. If they "make good" in this work they are eventually brought into the Labor Control Office as interviewers.

The ideal interviewer is the occupational expert who not only can win the confidence of the man who applies for a job, but who can "size up" that man and set him to the task to which he is best fitted. But the most important work of the interviewer is to make every workman feel that he has a friend higher up. Only a few days ago one of the most skillful occupational experts employed in this work of interviewing was dismissed because "he didn't know how to smile"; it was impossible for him to establish a bond of confidence between himself and the interviewee.

So effective has the work of this Labor Control Office at Hog Island proved that in one week more than 7,500 men were dissuaded from leaving, and were either returned to their old work or transferred to some new task to which they were better suited.

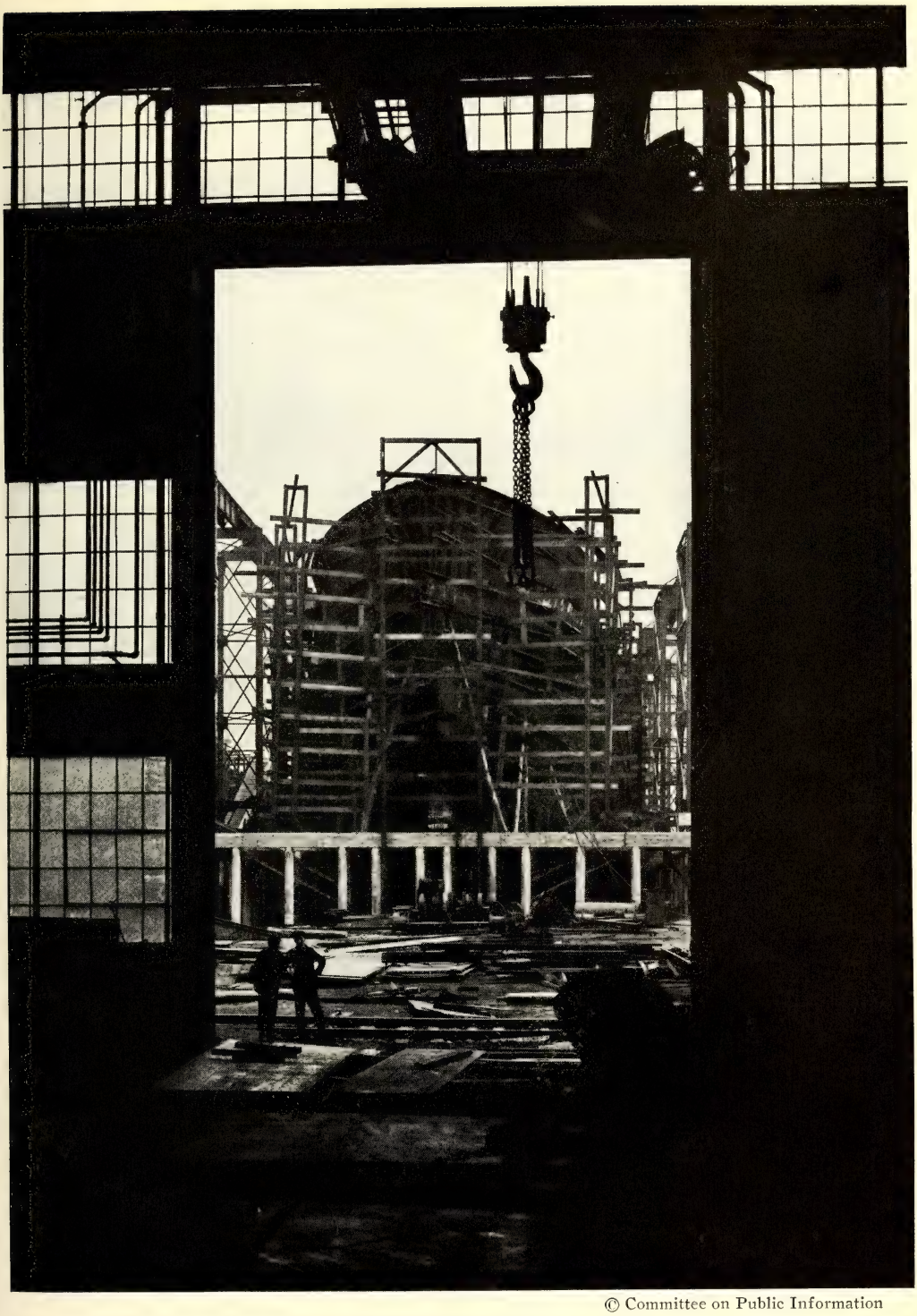
To keep in touch with the labor force at Hog Island is like trying to know personally every man, woman, and child in a town of 30,000 inhabitants—not only know their individual capabilities, but their idiosyncracies of temperament and their social viewpoint.

THE DEVELOPMENT OF HOG ISLAND

Hog Island, incidentally, is a wonderful industrial center. Just a year ago it was an 860-acre expanse of swamp and bog, lying practically inaccessible a few miles beyond the outskirts of Philadelphia. The work of construction, of draining, and of road-building began in October, 1917, and in spite of the delay occasioned by a winter of unparalleled severity, it is today, by virtue of the expenditure of $35,000,000 and immeasurable labor, an area of magic activity, with more than 70 miles of criss-crossing railroad tracks; an electric power plant sufficient to supply the combined needs of the cities of Albany, N. Y., and Richmond, Va.; a water system with twice the capacity required for a city the size of Atlanta, Ga., and a mile and a half of shipways stretching along the waterfront.

From the 50 ways of this yard there will be launched 180 ships, the contract price for which ($230,000,000) is double the entire gross revenues of Bulgaria and Turkey during 1914. These 180 ships will have a tonnage sufficient to maintain more than 400,000 of our troops in France. Seventy thousand freight cars full of material will go into the making of these fabricated steel vessels.

One important method of increasing the labor resources of the shipyards has been the successful effort to reduce the percentage of accidents, which, in the



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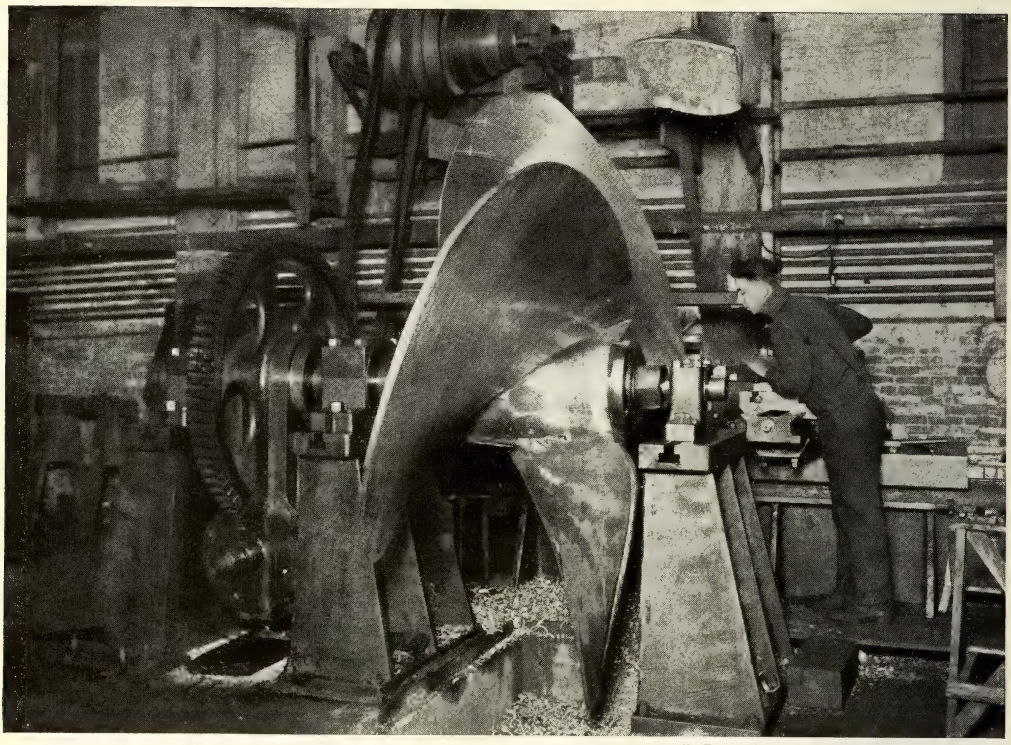
FROM SHOP TO SHIP

It requires six and a half million pounds of material to build a fabricated steel ship of 7,500 deadweight tons capacity, and nearly half a million rivets are needed to hold the parts together.



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A SHIP'S PROPELLER IN THE MAKING

For merchant vessels equipped with comparatively slow-moving engines, four-bladed propellers are used. The three-bladed propellers are usually used on fast merchant and naval ships. The first screw man-of-war ever built in any country was the U. S. S. *Princeton;* of 1,000 tons, launched less than 80 years ago.

rush and confusion of the early days, was excessively high. In one great yard early this year 141 men out of every 1,000 employed during one month were injured, the average length of time lost by each injured worker being 17 days. Five months later the percentage of accidents had been reduced nearly two-thirds, and the average number of days lost from work by the injured men did not exceed six.

The chief factor in bringing about this gratifying decrease in casualties has been the safety-first educational propaganda upon which the directors of industrial relations insist. Much of the credit is due, too, to improved hospital facilities, which enable injured men to receive immediate treatment, thus greatly lessening the danger of infection.

The percentage of accidents in the shipyards throughout the country today is not as high as in the steel mills, but corresponds to the general industrial rate. The Submarine Boat Corporation of Newark, N. J., which ranks second only to Hog Island in size, having 28 shipways, claims a world record for safety, in that it launched four ships without a fatality.

HOUSING CONDITIONS WHICH AFFECT MORALE

In time of war the word *morale* comes to have a significance so broad as to embrace all conditions which affect man's social relations and physical surroundings as well as his mental attitude, and the morale of the shipbuilder, like that of every other workman employed in an essential industry, is of as far-reaching importance in achieving ultimate victory as is the stamina of the man who operates a machine-gun or leads a bayonet charge.

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FINISHING A SHIP'S PROPELLER WITH A BATTERY OF EMERY WHEELS

This operation fills the air with a dust of emery and bronze particles which proves disastrous to the workmen if it is drawn into the lungs. The wearing of dust masks is essential to health.

In the expansion of existing shipyards and the establishment of new plants, the Emergency Fleet Corporation was, at the very outset of its activities, brought face to face with a critical menace to the workingman's morale—the problem of where and how he should live. Thousands upon thousands of laborers were needed to construct the shipways, to lay the railway tracks necessary for the economic distribution of material, to erect machine shops, executive quarters, hospitals, restaurants, and commissary depots.

In the majority of cases the shipyards were being built on low-lying waterfronts, sometimes far removed from cities. In every instance there was an influx of population so large as to overtax with distressing results the normal housing facilities of the several communities. Often the question for which shipyard contractors had no answer was not "Where can I get labor?" but "How can I house the labor which I have?"

Much of the labor turn-over during those first few months was due in large degree to the impossible living quarters of the men as well as to the confusion and generally unsatisfactory conditions within the yards themselves.

Many expedients were employed to overcome the difficulties. Some of these, such as the construction of tent cities, were obviously temporary solutions. In other cases, however, the plan adopted was such as may have a lasting and salutary effect upon the whole housing proposition in congested industrial districts. A typical example of the latter is that undertaken by the Merchant Shipbuilding Corporation in Bristol, Pa., where 14,000 men are employed.

The living accommodations at Bristol being incapable of expansion to the needs

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A TRACK CRANE CARRYING A PROPELLER FROM THE MACHINE SHOP TO A SHIPWAY TO BE FITTED ON THE SHAFT

The military police are conspicuous in many shipyard pictures nowadays. Every precaution is taken against enemy bomb outrages. A stick of dynamite in a shipbuilding plant is as much to be dreaded as a Whitehead torpedo at sea.

RETURN TO
Roland Case Ross

of the hour, the Emergency Fleet Corporation came to the financial aid of the Shipbuilding Company and a complete city of homes was erected.

BUILDING A CITY OF HOMES TO ORDER

On a tract of 155 acres adjoining the plant, a model town was conceived with the aid of experts in city planning. Broad thoroughfares were laid out, spaces for parks set aside, and locations for schools, churches, bakeries, restaurants, and for a theater, city hall, and department store were designated.

That was a few months ago. Today a $5,000,000 city of dwellings is nearing completion, not after the higgledy-piggledy fashion in which the Topsy boom towns of the past have "jest growed," but after a well-ordered, scientific plan.

The first impression which the visitor gains of this shipworkers' town of Harriman, with its 5,000 dwellers, is that of architectural comeliness. There are no frail, spindle-shanked three and four-story frame tenements with windows and doors flush against the outer walls, reminding one of a person without eyebrows; there are no tortuous alleys; no rows of tatterdemalion shacks and leantos surrounded by tumble-down, snaggle-tooth picket fences; no unkempt areaways; no fire-escapes adorned with all imaginable articles of intimate family wash; no vacant lots strewn with tomato cans or other goat pasturage. In contrast, there are more than a score of attractive stucco, slate-roof homes of six rooms each, 232 group houses of four and five rooms each, 200 three and four room apartments, and 60 brick homes, accommodating more than 500 families. The bachelor quarters include lodging houses, open dormitories, and a small number of neat bungalows, providing for the comfort of 2,300 men.

Every home has electric lights, porcelain bath, and hot-air heat. The apartments and bachelor quarters have porcelain tubs or showers, electric lights, hot water, and steam heat.

A VALUABLE EXPERIMENT IN HOUSING

Rents are fairly moderate. The most desirable homes in the community, those which face a wide, curving boulevard and are surrounded by attractive lawns, may be had at from $36 to $42 a month. Bachelor accommodations range from $1.75 to $3.00 a week, including attendance, the housekeeping being conducted by three-score orderlies under the direction of four foremen.

The school-house, with its spacious playground, is thoroughly modern in its lighting, ventilation, and sanitary arrangements, a ten-room structure furnished and equipped after the most approved standards.

At present the Y. M. C. A. building is the club-house of the town, and a temporary hall, with a seating capacity of 1,500, is serving as a community assembly room until the theater is built. The community bake-shop is run in conjunction with the cafeteria, where the equipment is ample to supply not only the inhabitants of Harriman, but all the other workers in the shipyard.

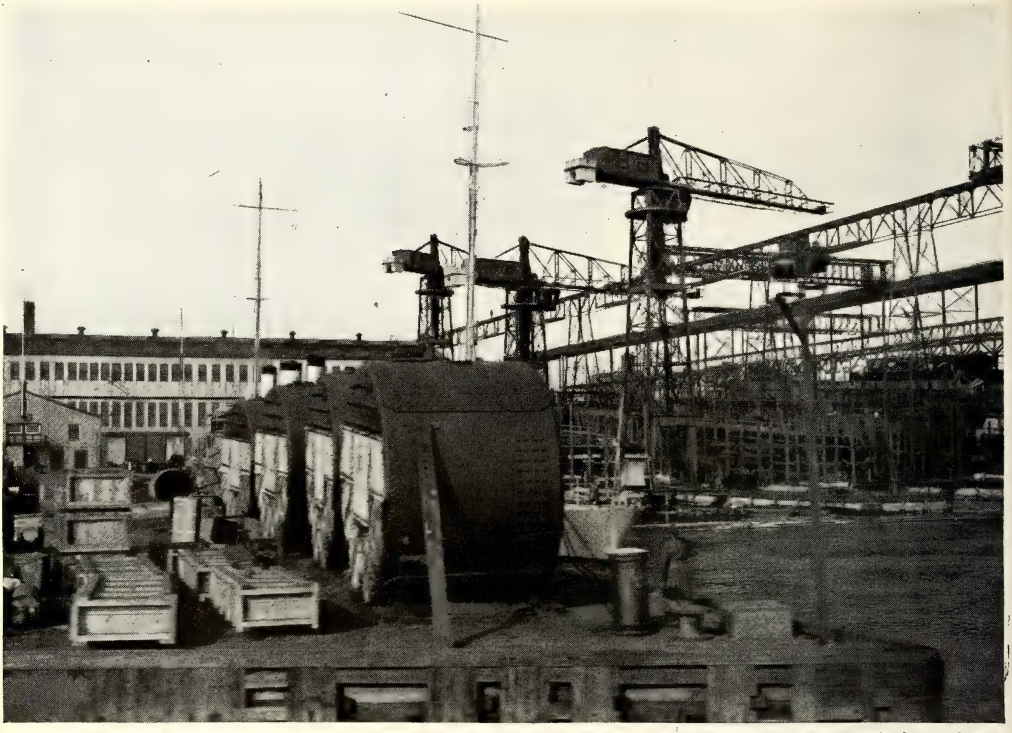
There is no municipal government in Harriman, for it is not incorporated. W. F. Smith, who has the title of city manager, is the mayor, council, and board of aldermen—the Pooh Bah of the community and vice-regent for the shipbuilding company and for the financial sponsor of the model city, the Emergency Fleet Corporation.

Harriman promises much, not merely as the fulfillment of an urgent need in time of war, but also as a valuable experiment in community housing. It has its defects, many of them, one being the danger of depriving its dwellers of civic responsibilities, but it is a long step in advance of the makeshift housing methods which obtain in so many industrial centers. It is worthy of close study, and may afford worth-while lessons for those who are to rebuild the devastated villages of Belgium and northern France.

THE TASK OF MANNING OUR NEW SHIPS

Finding men to build the ships and providing places in which they can live while so employed present larger difficulties numerically, but in no degree less serious or more immediate than finding officers and crews to operate the ships as they are completed.

The American seafarer, one of the hardiest, most resourceful, and pictur-



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SCOTCH MARINE BOILERS READY FOR INSTALLATION ON A NEW MERCHANT LINER

Sixty per cent of the labor of building a ship is represented in the hull. The rest is expended in installing the machinery and equipment. American shipyards have set many new speed records during the last twelve months, but a few weeks ago a shipbuilding plant in Belfast, Ireland, wrested a laurel from the Yankees when the Irish workmen completed the installation of machinery in five working days from the time of a vessel's launching.

esque products of our national life, once conspicuous in numbers, long ago became conspicuous only because of his rarity, as our merchant marine practically disappeared from the seas. When, therefore, in the face of war's calamity we found ourselves a people without ships, we likewise found ourselves without men to operate the merchant vessels which we began with such frenzied haste to build.

It was not that the sons of the skippers and seamen, who in an earlier era of our history won world-wide fame manning our peerless barks and clippers, had grown soft and sybaritic. There was still in the youth of the land the brawn, the initiative, and the love of adventure which those must have who answer the call of the sea. But there had been no incentive to awaken the latent longing for strange places and for the romance of trackless waters and of combat with Nature's storms and lightnings, her spuming waves, and the ceaseless urge of her unseen currents.

To the Merchant Marine Recruiting Service, another of the coördinate branches of the United States Shipping Board, inaugurated by Henry Howard, of Boston, was entrusted the task of re-creating a noble race of mariners for the needs of the hour and for the merchant fleets which shall not disappear from the waters when peace comes again to the world.

While the recruiting service was tentatively organized in June, 1917, and at that time began training officers, it was not until February of this year that an active campaign began for training crews. Once under full headway, the work has been pursued with commendable success. More than 11,000 experienced men have been admitted to the schools for officers

and more than 28,000 inexperienced youths have been enrolled for training as merchant mariners. Seven thousand recruiting offices, located mainly in each unit of a great chain of drug stores whose chief executive has lent every possible assistance of time and fortune to the government, are supplying from 500 to 600 new students daily for the apprentice schools for seamen maintained on a fleet of 12 training ships.

SCHOOLS FOR SKIPPERS AND SEAMEN

More than 1,600 men are today attending the officers' schools, fitting themselves for the duties of mate, engineer, etc. In the navigation schools the course of instruction is six weeks; the engineers' course is completed in one month. But both schools require of their students previous navigation or engineering experience of two years at sea or its equivalent. That equivalent in the case of engineers may have been special training in technical schools, experience as a locomotive engineer, or engineer of a stationary engine.

The apprentice course is for six weeks, at the end of which time the successful pupil receives a rating as ordinary seaman and is placed on board a merchant ship. The ratio of apportionment in crews is not more than four graduates of the apprentice schools to every six able seamen, an able seaman being one who has followed the sea for two years or who has secured his advanced rating by passing an examination at the end of his first twelve months.

Like the pupil in the riveting classes of the shipyards, the apprentice receives a salary while he is fitting himself for important work—a stipend of $30 a month, plus quarters and food which would arouse the envy of every man who ever sailed before the mast in the old days of American supremacy at sea.

When the 288 hours of instruction have been completed (eight hours a day, six days a week, with one instructor for every ten men), the newly created sailor, cook, steward, oiler, coal-passer, or water-tender—whichever branch he has chosen—begins work at from $60 to $75 a month, with 50 per cent additional should he be sent into the war zone.

In order to be enrolled in an officers' or an apprentice school, the applicant must pass a thorough physical examination and must be an American citizen.

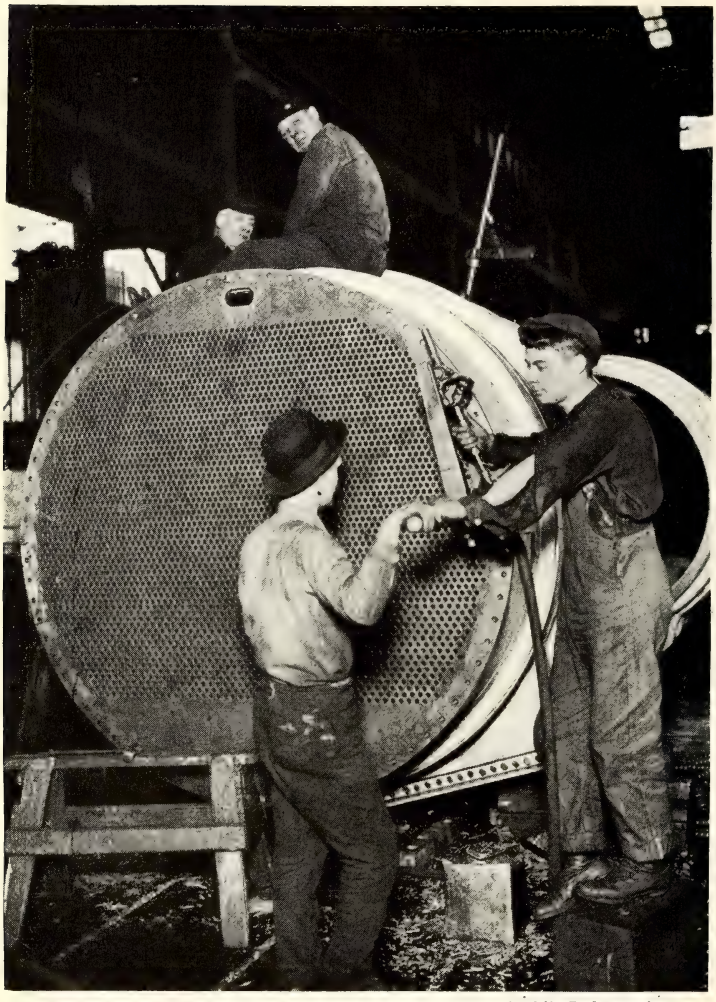
The strength of the personnel of the merchant marine at the present time is in the neighborhood of 75,000. If the war ends in 1920 and we have by then a merchant fleet of 3,500 ships, as is now the reasonable prospect, we shall need an additional 100,000 men, besides the number which must be recruited as replacement crews to take the places of those men who will return to shore life at the end of the war.

THE REMAINING MAJOR TASK

Having mobilized and trained the necessary man power for the task of building a vast merchant fleet; having provided the workmen with satisfactory surroundings and with the material which goes into the making of those ships; having begun to launch and fit out the ships themselves with something approaching quantity production; having organized machinery for the recruiting and schooling of officers and crews to man those ships, and having actually developed an appreciable number of such officers and seamen, the remaining major task of the United States Shipping Board lay in the direction of expanding the facilities of our ports and harbors in order to eliminate the woeful congestion which existed and still exists, and which would have become still worse as the number of ships increased.

James J. Hill, that great phrase-maker of commercial life, once defined a seaport as the funnel through which a country's commerce flows, and added the truism that the volume of traffic which a line can carry (be it a railway line or a steamship line) cannot exceed the capacity of its terminals.

Every one admits today that the conditions, both at our own chief seaports and in France, at the time American troops first landed Over There were "pretty bad." It may be that there was some exaggeration in the story that the great freighter *Nansemond,* formerly the German ship *Pennsylvania,* a cargo-carrier of 15,000 tons, lay alongside a dock at Brest for three weeks and then had to



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A MARINE CONDENSER WITH 4,000 SMALL BRONZE TUBES THROUGH WHICH COLD WATER IS PUMPED

The 7,500-ton fabricated steel ship is expected to make a speed of 11½ knots an hour, while the 3,500-ton wooden ship of the Ferris type has engines which send it through the seas at a speed of 10 knots. The shaft horsepower of the engines in the steel vessel is 2,500, while the indicated horsepower of the latter is 1,400.

return to America with two-thirds of her cargo of steel rails (urgently needed for the construction of communication lines to the American base camp) still in her hold. But even so, no one will attempt to deny that "confusion worse confounded" was a mild term to describe terminal conditions in the summer and fall of 1917.

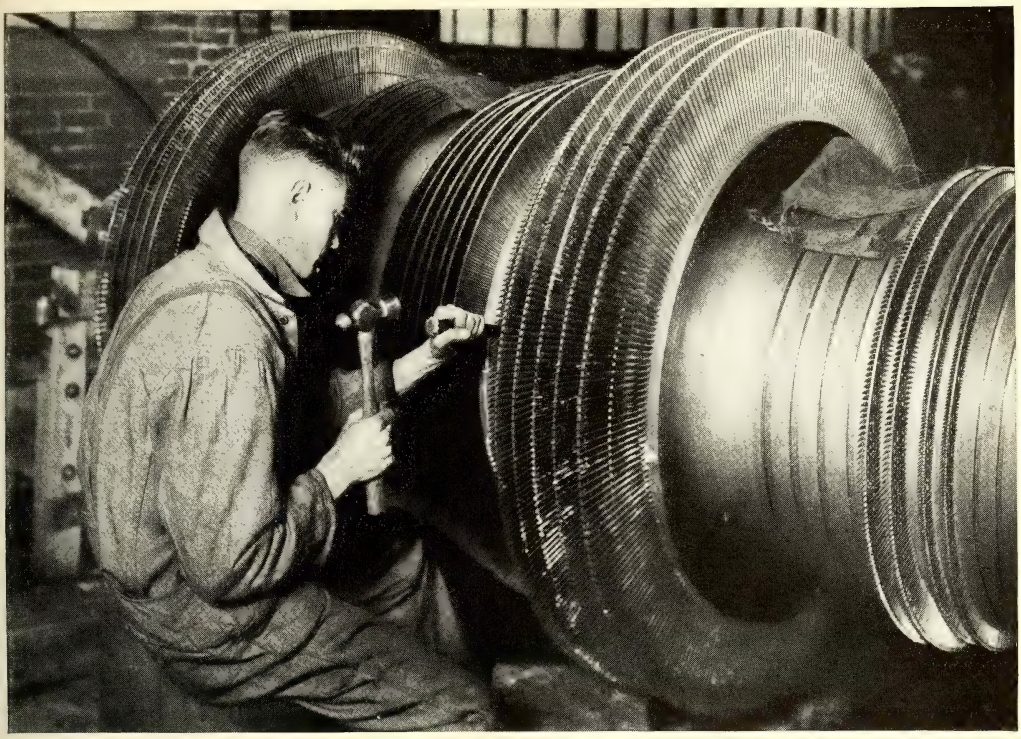
Through the indefatigable efforts of various branches of the army, the congested condition in the French ports of debarkation were effectually remedied, but there still remain many things to be done before our ships can be utilized to their maximum efficiency.

To expedite the correction of existing shortcomings, and to make ready for that new merchant fleet of millions of tons capacity, President Wilson suggested a conference among officials of the Shipping Board, the War Department, and the Railroad Administration. As the outcome of that conference, the Shipping Board, on May 23 of this year, created a Port and Harbor Facilities Commission.

A NOTEWORTHY COMMISSION

The reading public, through many channels of publicity, is fairly familiar with the work of the Shipping Board under the chairmanship of Edward N. Hurley; it knows of the achievements of Charles M. Schwab, Director General, and of Charles Piez, Vice-President and General Manager of the Emergency Fleet Corporation; it is conversant with the activities of Henry Howard, who directs the Merchant Marine Recruiting Service, but thus far the opportunities, difficulties, and lasting importance of the Port and Harbor Facilities Commission have been strangely overlooked by the American press.

The personnel of the Commission itself



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STRAIGHTENING THE MINUTE BLADES ON THE SHAFT OF A TURBINE ENGINE

The first turbine-driven vessel ever built was the *Turbinia,* which developed a speed of 34½ knots an hour on its trial trip in the spring of 1897. Today most of the high-speed merchant and naval craft of Great Britain and the United States are equipped with turbines.

suggests the ramified interests which it affects. E. F. Carry, until recently director of operations of the Shipping Board, is the chairman; Vice-Chairman S. M. Felton represents the War Department's interests; Rear Admiral H. H. Rousseau is spokesman for the Emergency Fleet Corporation; the navy is represented by Captain A. C. Hodgson; J. H. Rosseter speaks for the Division of Operations of the Shipping Board and Pacific Coast steamship interests, T. C. Powell for the United States Railway Administration, and G. S. Dearborn for the Atlantic Coast steamship interests, while E. Logan Hill, formerly assistant general manager of the Erie Railroad, is the dynamic secretary of the Commission and F. T. Chambers, U. S. Navy, is its chief engineer.

The task which lies before the Commission is Herculean. It must devise ways and means to enable our ports to handle an unimagined volume of war material, foodstuffs, and troops in less time than man ever before attempted such a feat.

The speed with which ships can be loaded and bunkered on this side, unloaded Over There, and started back for another cargo is the supremely vital factor in the maintenance of the three-tons per fighting man ratio. Any slackening of pace necessarily means additional tonnage, for a ship that makes a round trip between New York and Bordeaux or Brest in six weeks is exactly one-half as valuable as the ship of the same tonnage which can make the "turn-around" in three weeks.

The price which a rapidly growing seaport pays for its prosperity is the development of its shipping facilities along lines of transitory expediency rather than those of lasting and economical expansion. New York presents a flagrant example

of a city whose commerce has grown so rapidly as to outrun the imagination of its builders. Hence a congestion at railway terminals and at docks which defies immediate solution.

The Port and Harbor Facilities Commission has found it wise to begin surveys of ports all along the Atlantic, Gulf, and Pacific seaboards, to determine how and where best to divert a part of our commerce from New York Harbor.

These surveys embrace a vast deal of data. Not only is it essential to know the amount of commerce which has passed through a given port in time of peace, but what are its possibilities with respect to railway connections, the labor situation, the productivity of the adjacent territory; what amount and kind of imports can be absorbed in the neighboring States, as well as the kind of exports which can be handled most expeditiously and economically. It is obviously impractical to ship cotton from Boston or New York when it can be shipped from Savannah, Ga., the doorway of the cotton fields; but it is equally impractical to bring the cotton cargo-carrier into Savannah to discharge imports from Liverpool destined for New England consumption.

Likewise, it is a waste of time and labor to route all our coffee imports either through New Orleans or New York. The logical scheme would be to bring into New Orleans that portion of the Brazil crop which is consumed in the South and West, and that portion destined for the North and East through New York. These are typical elementary problems which the Commission considers in its surveys. Their number is legion.

One of the most important phases of the Commission's labors is to make provision for the proper and expeditious coaling of ships and for their prompt and thorough repair. A number of contracts have been let for the construction of dry docks, and financial assistance is being accorded private firms for the erection of wharves, piers, warehouses, improved machinery for bunkering, and for the installation of cranes and other modern loading and unloading devices. Repair yards are being built in several ports, and the plans for these are carefully scrutinized by the Commission's engineering experts, in order to insure adequate facilities for the new commerce carriers.

No part of the shipping program is fraught with greater possibilities for constructive accomplishment than that entrusted to the Port and Harbor Facilities Commission.

SPEED AND ECONOMY IN HANDLING FREIGHT

The economic waste which results from the improper handling of freight at terminals is appalling. The opportunity for improvement of conditions is demonstrated by the fact that the average cost of hauling a ton of freight for a distance of 240 miles in the United States is 74 cents, while the expense of handling that same freight at the terminals is 75 cents. Goods once loaded may be transported from Havana, Cuba, to Boston, a distance of more than 1,300 miles, cheaper than they can be moved from one pier to another in that city. And it has been estimated that a cargo of coal, after it has been loaded on board ship, can be moved from New York to Rio de Janeiro for less than it can be moved a distance of 60 feet on the docks by ordinary methods.

That the task of loading and unloading a ship can be developed to a science by the employment of highly specialized machinery and the use of docks specially built for specific kinds of cargoes has been demonstrated on the Great Lakes, where iron ore which formerly was hoisted from a ship's hold and moved to the ore pile for 50 cents a ton is now handled at less than one-tenth that cost.

Gratifying progress has been made in the rapidity with which our ships are being dispatched abroad, and the improvement is continuing. Two ships are now doing the work which it required three to do a few months ago. The procession of cargo-carriers in and out of our harbors reminds one of a never-ending merchant marine review. Every six minutes a merchant ship arrives and another departs from American ports. Sailings for Europe are even bettering that famous railway advertising slogan, "A train every hour on the hour;" a Europe-bound vessel departs every 40 minutes. These

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FINISHING THE BOW PLATES OF A MODERN FREIGHTER

One of the vexatious questions which has greatly perplexed the directors of the shipbuilding programs in Great Britain and the United States has been the problem of "overtime." Many industrial relations experts maintain that the payment of time-and-a-half or double-time for Sunday labor is one of the chief causes for absenteeism in the shipyards. The temptation is strong to work on Sundays and lay off a day during the week, thus securing seven days' pay for six days' work. Both from the standpoint of output and of the workmen's health, the seven-day week is being frowned upon in many quarters.

40-minute sailings do not include ships in the service of the army and navy.

In the new order of the day, there is no such thing as a loafing speed on any sea. Formerly, nitrate ships bearing that essential ingredient of explosives from Chilean ports to New York made four voyages a year; now the "turn around" between New York and Iquique is made in 44 days, while the trip from New York to Valparaiso has been made in 18 days. The round-trip voyage between Rio and New York, for ships bearing manganese for the manufacture of steel formerly averaged from three to four months; a Swedish vessel under charter to the Shipping Board has made it recently in 55 days. Ships bringing oil from Tampico to Galveston now average 11 days for the round trip, while some tankers occasionally make it in a week. Sisal is being brought from Yucatan in ships that make the turn around in two weeks. Out in the Pacific the round trip from San Francisco to China, including time in port, has been reduced to 81 days, while from Seattle to Japan and return is made regularly now in 68 days.

These speeding-up records are an earnest of what can and will be done when our ports and harbors are adequately equipped and when the faster and larger cargo-carriers are put into service.

AFTER THE WAR

All America recognizes the fact that the chief end of our ships is to safeguard democracy and enable us to enjoy it forever. But there are secondary ends also, and the foremost of these is the restora-

tion of our country to an honored place among the maritime nations of the world after peace has been declared.

No people living unto itself alone has ever been truly great. Commerce has been the world's greatest civilizing influence, and it has frequently happened that wealth and power and the opportunity to serve mankind have been entrusted to nations whose territorial dominions were inconsequent and whose peoples were numerically puny. Their influence was based on the universality of their knowledge of men and climes.

The Phœnicians, greatest merchants of antiquity, wrote their names large and indelibly in the chronicles of the ages, not through the virtue of their statesmen, not through the courage and strategy of their military captains, not through gifts of art, of religion, or of literature, but because from their ports of Tyre and Sidon they set sail on every sea, bringing the raw riches of mines and forests from the outer fringes of the world to Greece, to Egypt, and to the islands of the Mediterranean; because they carried their purples and linens to the princes and potentates of Rome, of Sicily, of Carthage, and to mysterious lands, gardens of the Hesperides, lying beyond the Pillars of Hercules; because they were the great disseminators of the culture of the East through their superior knowledge of the earth's geography, and because they could sail the trackless sea better than any other race of their time.

After the Phœnicians, the next country to establish her unquestioned supremacy on the seas was the great mother of civilization, Italy, whose mariners carried to the ends of the earth the fame of her marvelous city republics, Venice and Genoa. The wealth and power of these great capitals of commerce were founded solely upon ships. Then, as mutual rivalries undermined their world sway, and the discovery of a water route to the Far East brought England and western Europe into communication with the Orient, their prestige waned, and gradually there arose in northern Europe that remarkable maritime association known throughout the middle ages as the Hanseatic League—not a nation, but a world power whose units were bound together by common interests of commerce.

The successive rise and decline of Portugal, Spain, and the Dutch Republic, world powers whose supremacy, one after the other, was founded upon maritime prowess, are familiar to all students of human history.

CIVILIZATION'S DEBT TO BRITAIN

Then came the British Empire, the mother of colonies, whose sway upon the Seven Seas has been maintained for more than two centuries.

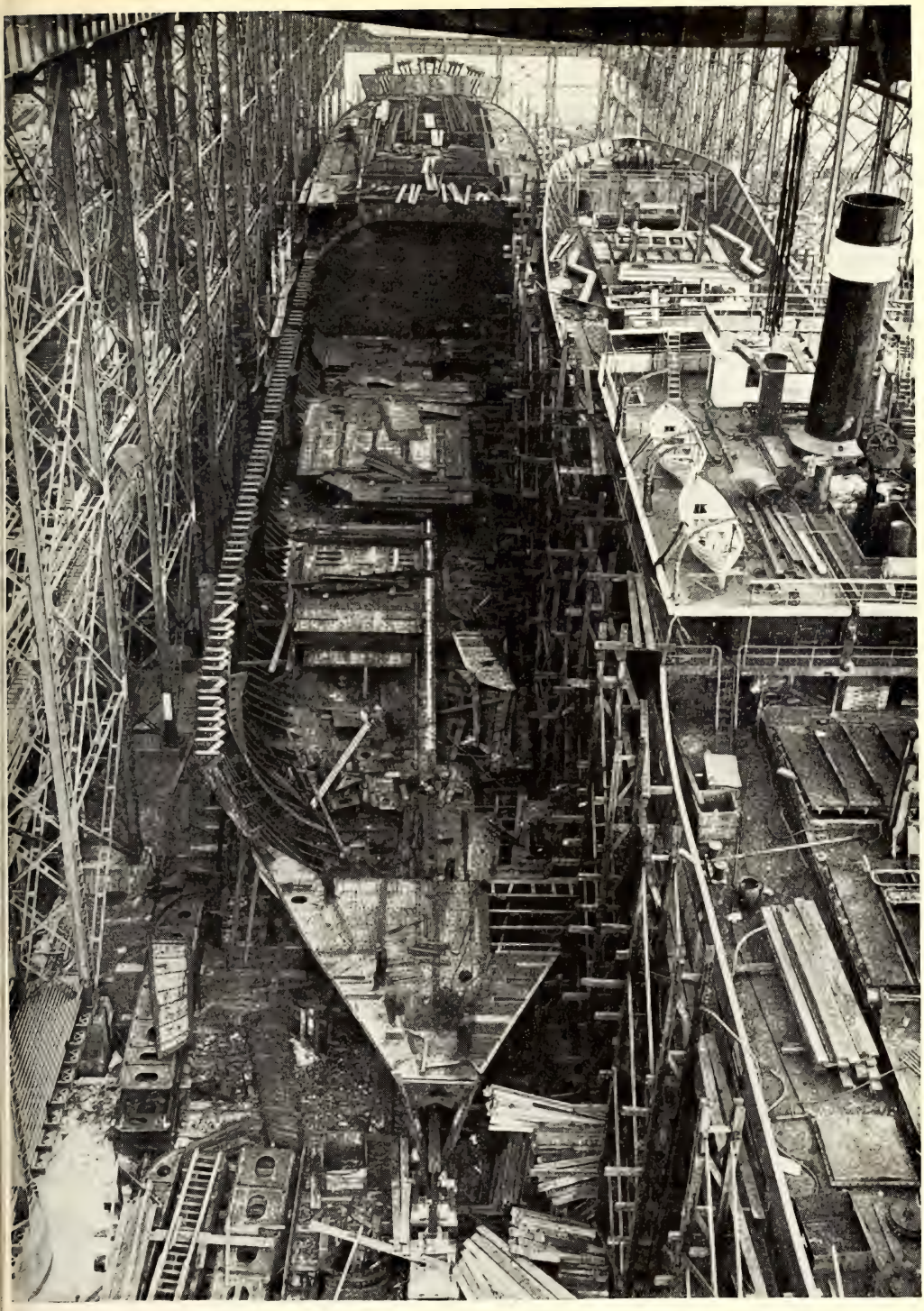
British command of the high seas, more than any other instrumentality of modern times, has resulted in the dissemination of light into the dark places of the earth. The Anglo-Saxon has spread his influence on every continent and over the islands of every sea by benevolent assimilation of alien peoples. This enduring sway of British influence, maintained by a girdle of commerce-bearing steel ships, furnishes an illuminating contrast to the ephemeral empire of Alexander, held together solely through the force of fear engendered by the Macedonian phalanx.

A hundred years ago America gave promise of sharing honors with the parent nation, but a combination of circumstances caused the young Republic of the West to withdraw from enterprises for which her mariners and her wonderful shipbuilders had proved her to be so fit.

From 1793 to 1842 more than four-fifths of all the imports and exports of the United States were carried in American bottoms; from 1843 to 1862 the proportion declined to three-fourths. The next quarter century saw it diminish to one-fourth, and finally to only a little more than one-tenth, from 1887 to 1913.

Now, with our shipyards turning out steel ships, wooden ships, and concrete ships, the auguries seem propitious for that not-distant day when, with all the world at peace, the Union Jack and the Stars and Stripes shall float side by side in all the ports on earth and contend in brotherly rivalry for supremacy of speed on every sea. Then will there be an Anglo-Saxon partnership in commercial ventures against which Teutonic aspiration can never raise its bruised head in menace.

In the meantime, to thwart the common enemy of mankind on land, America will continue to build ships, ships, ships!



Photograph by Paul Thompson

BUILDING SHIPS IN PAIRS

Ships are costing three or four times as much today as in pre-war times, but they are being built six or eight times as fast, and speed is the essential factor just now

A PART OF THE 860-ACRE TRACT OF SWAMP AND BOG, PURCHASED AT $2,000 AN ACRE, UPON WHICH THE $35,000,000 HOG ISLAND SHIPBUILDING PLANT HAS BEEN BUILT

On this spot, where formerly the song of the mosquito was the only sound to greet the ear of the surveyor or the fisherman, there is today

THE AMERICAN PEOPLE MUST BECOME SHIP-MINDED

By Edward N. Hurley

Chairman, United States Shipping Board

THE Germans used to complain, before the war, that only a small proportion of the American tourists who visited Europe each summer filtered through to their country. England, France, Belgium, Holland, and Italy got the heavy battalions of the American tourist army. The Germans felt neglected, especially as many of our tourists traveled in their big liners. Berlin even undertook to overcome the handicap of distance by organized attractions designed to make it a rival of Paris. But the percentage of real American tourist travel to Germany was small—most Americans who crossed the Rhine went for purposes of study or business.

During the past summer, however, this situation has entirely changed!

We have sent abroad in three months a number of "tourists" greater than the entire eastbound passenger travel for an average pre-war year—that is, the total eastbound passenger traffic in 1913 over the North Atlantic routes was 718,373, while this summer 300,000 American *soldiers* have been ferried over the Atlantic in one month. Many of them went in the big German liners, now used as transports by Uncle Sam. Some of them landed in England, others in France, the old tourist points; but every one of them was dominated by the desire to cross the Rhine and visit Germany and interview the Kaiser in Berlin!

Which goes to show, perhaps, that there is always some method of getting things started your way.

BRITAIN, FRANCE, AND ITALY AIDED IN TRANSPORT OF TROOPS

We could never have carried out the big job of transporting troops and supplies to Europe without the help of Great Britain and her Allies. During the past summer, at times of maximum troop movements abroad, British ships have carried as high as 80 per cent of our soldiers, while more than 50 per cent are now going across in British vessels. Aid has also been furnished us by France and Italy. On September 1 of this year the United States Shipping Board controlled nearly 10,000,000 dead-weight tons of merchant ships, comprising seized enemy ships, requisitioned and chartered foreign ships, old American ships pressed into service, and new ships owned by the United States Shipping Board.

THE DIFFICULTIES OF OPERATING OUR MOTLEY FLEET

It is a great Armada, this army supply train to France, for it is almost double the whole German merchant marine at the outbreak of the war. But it is also rather a motley collection of bottoms—old ships and new, big ships and little, the Leviathan and the ocean tramp, the steel tanker and the wooden coaster. Moreover, it is operated under difficulties that have probably never confronted any other nation. We have had to train merchant officers and seamen. There have been complications in loading and unloading, both on this side and abroad, due to the diversity of cargo handled and emergency pressure put upon port facilities. Our Armada, being made up of diverse sizes and speeds, has not lent itself to standard operation. Finally there has been the very definite handicap of convoy traffic, which pulls ships down to moderate speeds, lengthens the average voyage while at sea, and hinders turn-around at the ports, because convoyed ships must wait their place, regardless of efficiency in loading or unloading.

We are doing the job assigned us today with the help of the British, French, and Italians, and when one remembers that the American military force has been multiplied by five this year, with a cor-

A SCENE AT HOG ISLAND WHEN SNOW AND ICE PRESENTED ALMOST INSUPERABLE HANDICAPS TO THE CONSTRUCTION OF 50 SHIPWAYS

But work progressed throughout the severest winter in the history of Pennsylvania, and today this is the site of a shipbuilding plant employing 30,000 men. The ships which this yard is expected to produce under a contract with the United States Government will cost $330,000,000—two

RETURN TO
Roland Case Ross

BEFORE IT WAS POSSIBLE TO PROCEED WITH EXCAVATION WORK AT HOG ISLAND LAST WINTER, IT WAS NECESSARY TO THAW THE GROUND WITH LIVE STEAM

At any other time and in almost any other place it would have been logical to wait for the weather to moderate, but with the Huns marshaling their forces preparatory to launching their great spring drive, all America was spurred to the limit of its capabilities in hurrying the construction of a great cargo and transport fleet.

responding multiplication in the demand for tonnage, perhaps we have reason to feel that we are doing more than we anticipated when the original war shipbuilding program was laid down.

But tomorrow we will do better.

THE COST OF SHIPBUILDING AFTER THE WAR

Now that new, modern steel steamers are being delivered to the Shipping Board, it is possible to look ahead a year and see increased efficiency in our ocean supply service. We shall have big transports running at good speeds, with beef ships, tank ships, and steel freighters. A large proportion of these vessels will be oil-burning, with turbines, comfortable quarters for crews, and other improvements. It will then be possible to standardize operation and increase turn-around at ports, serving the American soldier in France with less tonnage.

Cost of building ships in American yards after the war should compare favorably with costs in other countries. We shall have great yards for fabricated ships and quantity production. These will put the industry on a sound footing, an entirely new basis, and we shall do on the ocean what we are already doing on the Great Lakes—build and operate ships more economically than any other nation in the world. Moreover, we will have enough shipbuilding business so that all our yards can specialize on one or two classes of ships, as is done abroad.

In the past our few merchant shipyards built almost anything that was ordered, from a tug to a floating dry-dock. That was a fundamental handicap in cost, due to our small volume of shipbuilding.

OVERLOOKING HOG ISLAND AFTER THE WORK OF CONSTRUCTION WAS FULLY LAUNCHED

There are almost enough miles of railway within the limits of this shipyard to reach from Washington and Baltimore

THE 50 SHIPWAYS AT HOG ISLAND, EXTENDING A MILE AND A HALF ALONG THE WATERFRONT

It will require 70,000 freight cars—a train 550 miles long—to convey the material which will enter into the construction of the 180 ships to be built for the United States Shipping Board at this gigantic shipyard

THE WOODEN BARRACKS FOR WORKMEN AT HOG ISLAND RESEMBLE THOSE OF AN ARMY CANTONMENT

At no other shipyard was the housing problem so serious as at Hog Island, owing, primarily, to the fact that the plant was located on an inaccessible site some miles outside of Philadelphia. Railway and street-car lines had to be built before any large group of men could be set to work erecting temporary living quarters.

With a real merchant marine demanding several million tons of new shipping yearly for growth and replacement, the situation will be entirely different—we will stop tinkering and jobbing and begin *manufacturing* ships.

OUR MERCHANT MARINE MUST BE WORTHY OF INDUSTRIAL AMERICA

Our supply ships today, despite the remarkable way in which they are meeting the war emergency, are nevertheless a reproach to us for past neglect of ocean transportation. And when our new ships materialize and are placed in service, embodying modern features of design, they will represent America's correction of past neglect and point a way to a merchant marine worthy of our national efficiency in other industries.

When our present shipbuilding program has been carried out we will have a merchant marine of the first order, so far as physical equipment is concerned. The present building program is laid out to cover about two years. It calls for more than 16,000,000 dead-weight tons of new construction, comprising 2,249 contract ships, 42 concrete ships, and 402 requisitioned ships.

The transports can be converted into passenger-and-cargo liners, running on regular routes between this country and Latin America, Europe, the British colonies, and the Orient. Fast cargo ships, refrigerating ships, and tankers will be assigned to regular freight routes. Tramp cargo-carriers will take their place in the charter ocean traffic.

AMERICA'S FACILITIES ON THE OCEAN AFTER THE WAR

America will have facilities on the ocean for delivering her factory and farm products, bringing home raw materials from other countries, carrying her customers to her doors, and, what I consider to be even more important, taking Americans abroad as tourists and salesmen and students and creators of international good will, especially to Latin America.

It is generally thought that we are handicapped in the operation of ships by higher American wages paid officers and seamen and obsolete navigation laws. Actually, our real handicaps have been lack of a large merchant marine covering American trade routes regularly, to give us the benefit of quantity handling, and lack of modern port facilities to give us quick turn-around.

In our other industries we have demonstrated it as a principle that the way to cut costs was not to cut wages, but to increase the volume and the efficiency. War is giving us a big merchant marine—a basis for American inventiveness and energy to work upon, developing new methods.

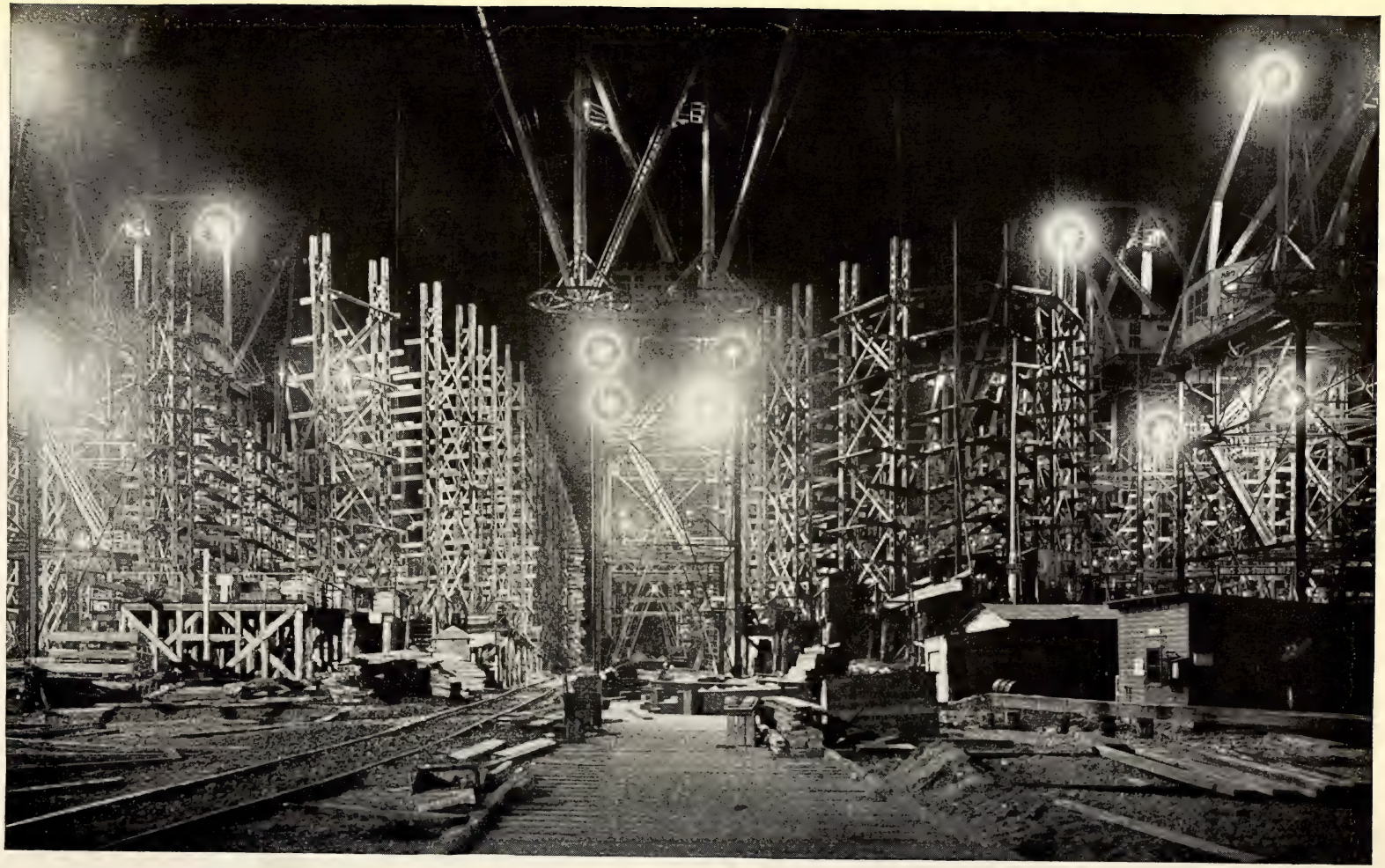
We have the best-developed petroleum industry in the world, and will increase the tonnage handled per man in ocean transportation, as well as reduce costs and eliminate much of the uncongenial work aboard ship, by building vessels equipped to burn oil either under steam-boilers or in explosion engines. Moreover, we can keep our ships at sea as many days in the year as possible, and eliminate costly waiting in port by rebuilding our ocean terminals, linking them up to our railroads, and turning our ships around in a matter of hours instead of days, just as we do with our big carriers on the Great Lakes.

AMERICA MUST BECOME SHIP-MINDED TO WIN MARITIME POWER

But it takes something more than physical equipment to make a merchant marine. We must have technical training and morale, if you please. We must make America ship-minded. We are so little ship-minded today that it is chiefly the difficulties of operation which occupy the thoughts of those who are giving any thought whatever to our merchant marine of tomorrow.

Our people still think of ships and foreign trade with fear and doubt, contrasting ourselves with the more efficient maritime nations.

Their thought of ships today is approximately what their thought of war was a year ago, when we were passing through the difficulties and gloom of preparation. These were dark months, and it seemed as though we should never get anywhere in stemming the advance of the Hun. But we know what happened at Chateau-Thierry, when two divisions of the new American Army not only stopped several



NIGHT SCENE ON THE WAYS OF THE HOG ISLAND SHIPYARD

In order that work may proceed night and day, the electric-lighting system is most elaborate. The electric-power plant is large enough to supply the needs of a city the size of Seattle.

divisions of crack Prussians, but sent an electric thrill of hope and youth and the fighting spirit through the war-worn Allies. That was an achievement, not of numbers, or equipment, or advantage of any kind, but purely of morale.

And in thinking of the American merchant marine as it will be tomorrow, I feel confident that we will back up our ships with something of the same spiritual quality. There may be difficulties and limitations we do not yet know. But I believe the American way of overcoming them will be to exert our national genius for invention and organization, holding our own through the development of new methods.

SHIPBUILDING COMPARED WITH THE AUTOMOBILE INDUSTRY

Fifteen months' experience as Chairman of the United States Shipping Board has made me somewhat wary of prophecy. Yet I feel safe in predicting that a year from now, provided we give the necessary thought to this great question of the merchant marine, we shall have as great confidence in its efficiency and its future as we have today in our army abroad.

Comparisons between the American automobile industry and our new merchant marine are natural. We are building our fabricated ships on the standardized quantity production plan, like American automobiles. Our automobile industry has become what it is, first, through the average American family's need for an automobile and the ability to buy it; and, second, the splendid spirit of the industry. The average American producer needs ocean transportation just as much, and it is reasonable to assume that when the need is realized we will generate a merchant marine spirit comparable with the automobile spirit.

SKILL AND TRAINING ESSENTIAL IN OUR MERCHANT MARINE SERVICE

Given the ships and the merchant-marine spirit, only one other element is needed—that of technical training in shipping and foreign trade.

People think of seafaring men as more or less unskilled laborers. They admit that the old-time salt on a sailing ship was a man of many trades, knowing how to knot, splice, reef, and steer; but they have heard that the modern tramp steamer requires chiefly deckhands and coal-passers.

Nothing could be further from the truth. The men who man and command modern steel ships are divided into three classes—deck department, engine-room, and steward service. Deck duties call for skill in navigation and lead to posts of highest command. The engine-room of a modern steel steamer carries possibilities for learning a half dozen trades; it has boilers, engines, dynamos, motors, lighting, refrigeration, machine-shop work, and so forth. Even the steward's department on a passenger liner calls for knowledge and skill comparable with that needed for running a modern hotel. So, in the operation of ships, we find a whole bundle of interesting technical crafts, with possibilities of rising in the merchant marine or fitting one's self for opportunities ashore.

TRAINED MEN REQUIRED ASHORE AS WELL AS AFLOAT

And this is only a beginning in the technicalities connected with shipping. Ships are loaded and unloaded at our ports. That calls for dock management—warehousing, conveying machinery, stevedoring—all technical in their nature. Ships must be insured and cleared, cargoes must be routed, with shipping and ship's papers—the documents connected with ships are many and technical. Freight must be organized and assembled for quick handling on regular routes covered by schedule. If ships are to make money, that calls for skillful handling of outgoing freight in this country and expert selling and service in foreign ports. In fact, there is another compact bundle of technical crafts connected with the merchant marine ashore, at home and abroad, and beyond these crafts again we find the foreign branches of American exporters and manufacturers and banks.

Even to man our emergency supply ships to France we have been compelled to recruit and train officers and seamen at the rate of several thousand weekly. Unless we can train men and have them ready for the American merchant marine

LOOKING EAST FROM PIER A AT HOG ISLAND

Photograph from U. S. Shipping Board

The crowd has assembled to witness the launching of the *Quistconck*, christened by Mrs. Woodrow Wilson. The decorated prow of the vesssel about to be launched is seen in the middle distance.

in its broadest aspects, ashore as well as afloat, it will be necessary to depend upon foreigners with the requisite experience. Therefore, we are taking steps to establish vocational and college courses throughout the nation. There will be courses in specific trades suited to men already at work in shipping offices, and on docks and railroads, fitting them through concentrated night study for advancement in their present positions. And there will be college courses for men who wish to prepare for ship operation, port management, foreign trade, consulships, and the like.

So, out of our present ocean supply train for the army abroad, there are growing many possibilities and opportunities.

CREDITABLE PROGRESS IN THE FACE OF GREAT DIFFICULTIES

Looking back twelve months to the time when we faced the task of building 150 new shipyards for merchant tonnage, and when only two complete new ships had been delivered to the Shipping Board, I feel that we have not only made creditable progress against overwhelming difficulties, but that the thought of the nation has followed us, and made even greater progress in the building of sound public opinion.

Looking ahead to the coming year, I feel that we shall make even greater progress in ship operation and the development of a real merchant marine. It is logical to assume that the quick war-time intelligence of the nation will keep pace with us during the coming months, and that a year hence, when the American merchant marine is a physical actuality, there will be a backing of national public opinion equal to the support of our ships, their profitable operation, the making of any adjustment in laws that may be necessary, and the development of foreign trade to make the American merchant marine a permanent institution.

We are awake once more on this subject of ships and shall not go to sleep again, any more than we shall go to sleep in the automobile industry, or railroading, or aircraft, or military preparedness.

War has taught every class of American producer the vital importance of ships. The American farmer, for example, has suffered from lack of ocean tonnage during the war in selling his specialties, such as fruit, and has also suffered for lack of fertilizers. Today he knows what ships mean in farming and is looking ahead not only to the protection of the American merchant marine, but will use it to extend his business. For instance, we are building many refrigerator ships to carry beef to the war zone, and these will be useful after the war to sell red apples, California and Florida oranges, dairy products, and the like of the American farmers.

We are building army transports which after the war will be converted into cargo-and-passenger liners to South America and other regions, furnishing quick delivery service for the American stockman to sell valuable breeding animals abroad.

MERCHANT MARINE VITAL TO NATION'S WELFARE

The manufacturer has felt the pinch of scarce ocean tonnage to even a greater degree, both for the sale of his products abroad and the import of his raw materials. Today he knows the value of ships and understands that an American merchant marine is vital to the national welfare. It is not wholly a matter of cost. He wants the facilities. He wants American ships for protection against emergencies and he wants them for the direct high-class ocean service on American trade routes which will enable him to reach new customers, build new trade, and hold it.

What people want they usually get. The American people today are alert to the importance of ships, and our national business genius will be equal to working out all the problems and overcoming all the difficulties.

OUR INDUSTRIAL VICTORY

By Charles M. Schwab

Director General, United States Shipping Board Emergency Fleet Corporation

SECOND to the great military victory that the American Army will have won in France when this war is over will be the industrial victory here at home. It will be a triumph no less significant and enduring than that won on the battle-fields. The battle at home is now raging, and victory already is perched on the banner of the American shipbuilders.

Few persons realize what has been done in the shipyards since we entered the war. Without the constant daily observation of progress, such as I have enjoyed while personally visiting the shipyards of the country since I joined the government's forces, it might well have been difficult for me to grasp the big essential facts of our shipbuilding effort.

American yards today are building ships faster and better than anywhere else in the world. Our speed-up performances have revolutionized the industry. In building a huge merchant fleet in two years, or three or five, for that matter, we are doing the impossible; yet the fleet is coming on.

The story of our accomplishments in the yards that extend from Maine down along the Atlantic to Florida, along the entire coast of the Gulf of Mexico, and from southern California to the uppermost point of Washington, on the Pacific, is the most amazing account of industrial progress ever written.

The truth is that we in America have gone to shipbuilding just as we go to any other industrial enterprise. Whether we be making automobiles or harvesting machines, or what-not, we Americans have the habit of going after things with the single idea of getting them done. So, when it came to building ships, we violated every convention, if such a thing exists in shipbuilding, and set to getting the ships afloat in the shortest possible time.

We were not a shipbuilding nation when we entered the war. Today America is the greatest shipbuilding nation in the world. The Bureau of Navigation the other day informed Chairman Hurley, of the United States Shipping Board, that more tonnage had been built in this country during the last year than in Great Britain. That was one of the most significant reports given to the American people since the war began.

ACCOMPLISHING A MIRACLE OF PRODUCTION

Now, how did America bring about this miracle of production? Before the war the building of a steel ship, from keel-laying to launching, required from nine months to two years. Now we are building these ships in one month. Some have been launched in less than one month from the time of keel-laying. In the old days they used to lay the keel and then figure out where the rest of the ship was going to come from.

All that is changed now. Today the shipbuilders, with contracts calling for work that will keep their men engaged for months to come, order their material in wholesale quantities. One yard on the western coast has ordered steel for the construction of 39 ships. The only thing that remains to be done in that yard is to put the steel together.

The men are spurred on by a patriotic desire to help win the war. New methods of fabrication have taken the place of the old and slower ways, and every shipbuilder is on his toes, eager to take advantage of any suggestion that lends more speed to his task.

When the New York Shipbuilding Corporation at Camden, N. J., built the *Tuckahoe* in 27 days, the shipbuilding world gasped. Practical men at the head of some of our shipyards frankly disbelieved the story of the *Tuckahoe*. They said it was a physical impossibility to put together the steel required in a 5,500-ton collier in that time. But since then the *Tuckahoe's* record has had to go into the

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THE FIRST OF A FLEET OF 180 SHIPS TO BE LAUNCHED AT HOG ISLAND

The *Quistconck* is to be used in the transportation of food and supplies for American troops in France. It is a 400-foot vessel drawing 24 feet of water when loaded. Its keel was laid on February 12 and the launching took place August 5. Twenty-seven rolling mills supplied the steel for the ship and 980 men were employed on its construction.

THERE WAS FEASTING AND REJOICING AT HOG ISLAND ON THE DAY THAT THE SHIPYARD'S FIRST VESSEL WAS LAUNCHED

A view of the tables where luncheon was served to the guests at the greatest going-in party ever given in a shipyard. The thousands who came to see the launching of the *Quistconck* stood in the noonday August sun for hours, and 500 were overcome by the heat.

discard. It was a splendid achievement, and all the more glory belongs to the builders of the *Tuckahoe* because their example has inspired other yards to even better records.

A SPEED CHALLENGE TO EVERY SHIPYARD IN THE COUNTRY

When the *Tuckahoe* was launched, a speed challenge went forth to every yard in America, and since then three shipbuilding plants have succeeded in lowering the record. First came the Bethlehem Shipbuilding Corporation at Alameda, Cal., which put a 12,000-ton cargo boat, the *Invincible,* into the water in 24 working days after the keel was laid. Then the Great Lakes Engineering Works, at Ecorse, Mich., built a 3,500-ton freighter, the *Crawl Keys,* in 14 days. More recently the Grays Harbor Motorship Corporation built and launched the *Aberdeen* in 17½ days from keel-laying. This was a wooden boat, and the record is so much better than any previous performance in the history of wood shipbuilding that it defies comparison.

Now, remember that two years ago the building of the *Tuckahoe* would have taken a year or a year and a half, the *Invincible* two years or more, the *Crawl Keys* nine months or one year, and the Good Lord only knows how long it would have taken to build a wood boat.

The success of American shipbuilders in lowering the time required for building steel vessels is due to three important factors:

First, and in my mind foremost, is the splendid spirit that actuates the men in the yards and leads them on to better and better performance.

Second, the organization that has been built up in our yards in the last year

READY FOR OUTFITTING

As soon as the *Quistconck* had left her shipway and was afloat on the waters of the Delaware, a fleet of small tugs towed her to the fitting-out basin. In the meantime huge cranes were laying the keel of a new vessel on the ways which the first Hog Island ship had just quitted.

makes for efficiency and permits all of the speed achievements mentioned.

Third, there have been marked improvements in the methods of hull construction and assembling of material. As pointed out before, the material for ships is assembled in huge quantities. When the time comes to put together this material, the stuff is all there.

STANDARDIZATION OF SHIP CONSTRUCTION

There are other factors that play an important part in our new speedy construction. In the last few months, particularly, we have been working toward the standardization of ship construction.

Before the war every yard was building ships according to its own design. Just as a dressmaker cuts out patterns from a dress, a shipbuilder builds the frame of a ship, and in the old days every ship called for a different pattern. There may have been some vessels with double decks, some with triple. The types were almost as many as the ships. That is true to a certain extent today, for we are only now getting the requisitioned ships completed. As fast as they go off the ways we are instituting our standardization process.

Soon we hope that each steel shipyard on the market will be building a single type of ship. The advantages of this are obvious and are twofold: First, there is the economical advantage from the building viewpoint; second, there is the equally advantageous saving from the viewpoint of the ship-owner and the ship-buyer. The saving in cost of construction begins, with the standardized ship, in the shops, scattered throughout the country, which supply the material with which ships are constructed.

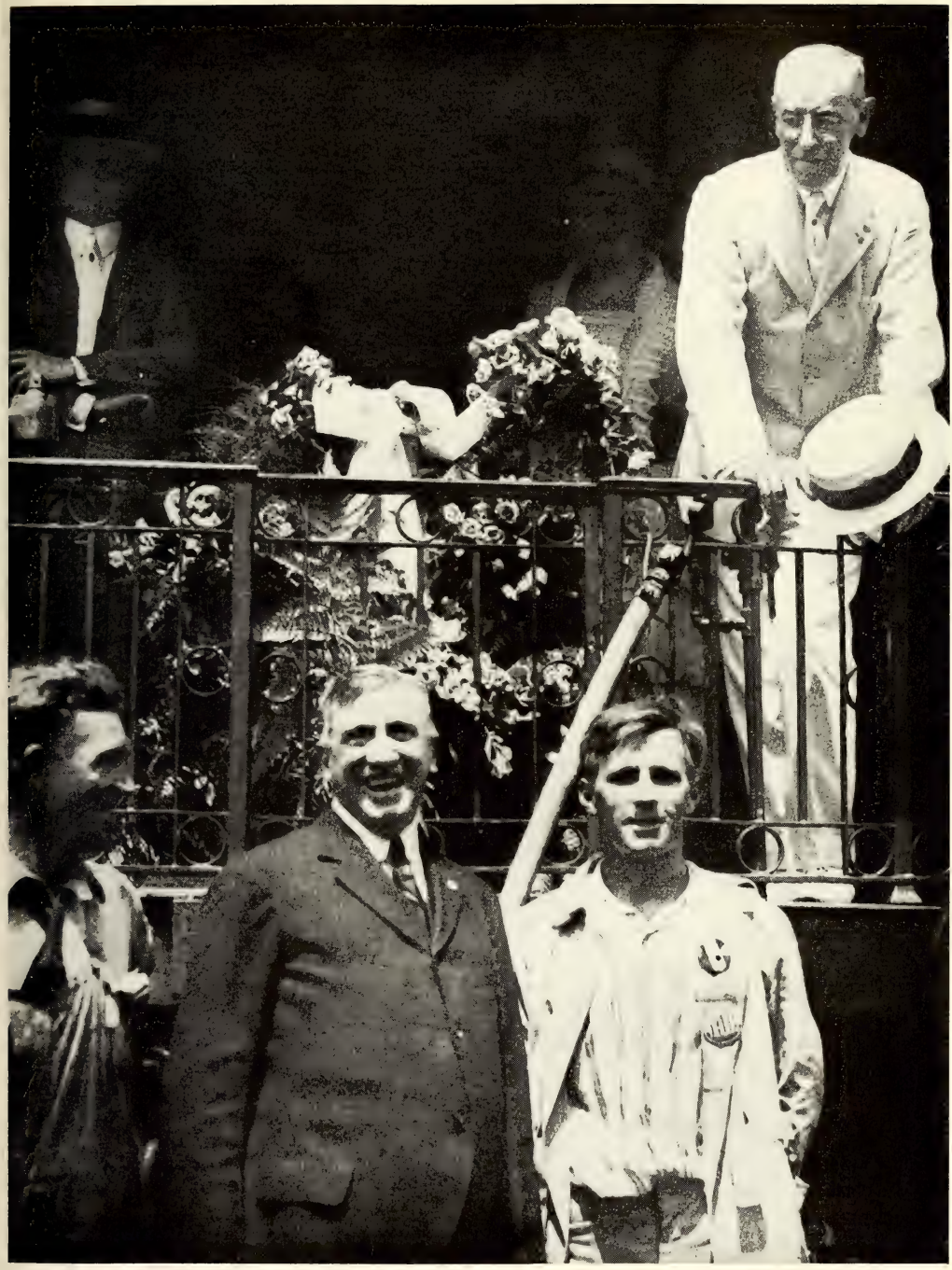
Take the matter of buying plates, for example. When a shipyard, under the standardization scheme, buys plates for

MRS. WOODROW WILSON: "I CHRISTEN THEE 'QUISTCONCK'"

The First Lady of the Land chose *Quistconck* as a fitting name for the first ship launched at America's largest shipbuilding plant because this was the Indian name for Hog Island. There is an interesting story about the chronometer which has been installed on the *Quistconck*. It is a British-manufactured instrument, which was presented to a British sea captain by a German prince as a testimonial of the German's appreciation of British hospitality off the coast of Brazil 75 years ago. As there were no manufacturers of chronometers in America at the outbreak of the war, our new American ships are being equipped with used instruments. The British Admiralty was asked to supply us with 700 of these delicately adjusted time-pieces essential in the navigation of ships. The *Quistconck's* chronometer was one of them.

a certain type of ship, it can order in quantity lots. The steel mill knows that separate pieces are of a standard size and design. The mill workers, therefore, can go ahead turning out these standard plates in large numbers. The standardization saves them from stopping now and then to change their cutting and stamping machines. Every halt of this kind in a big rolling mill means loss of time and labor.

The same is true of all the other shops



Photograph by Carl T. Thoner

A MASTER STATESMAN, A MASTER OF INDUSTRY, AND TWO MASTER WORKMEN—ALL THINKING SHIPS

President Wilson from the rear platform of his train has just congratulated Charles M. Schwab, Director General of the Emergency Fleet Corporation, and two champion riveters upon the successful launching of Hog Island's first fabricated ship.

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FOUR SMILES THAT MEAN MORE STEEL SHIPS

In maintaining and improving the morale of the shipbuilders, one of the most effective agencies has been the publication of weekly newspapers for the workmen in most of the large plants. There are more than 30 of these "house-organs," so to speak, now being issued, and the names of many of them are picturesque as well as characteristic, as, for example: "Blockade Runner," "Fore and Aft," "Speed Up," "Chips," "Do Your Bit," "The Federal Shipbuilder," "Going Some," "Heave Together," "Over Here," "Over the Top," "The Pathway to Democracy," "The Merchant

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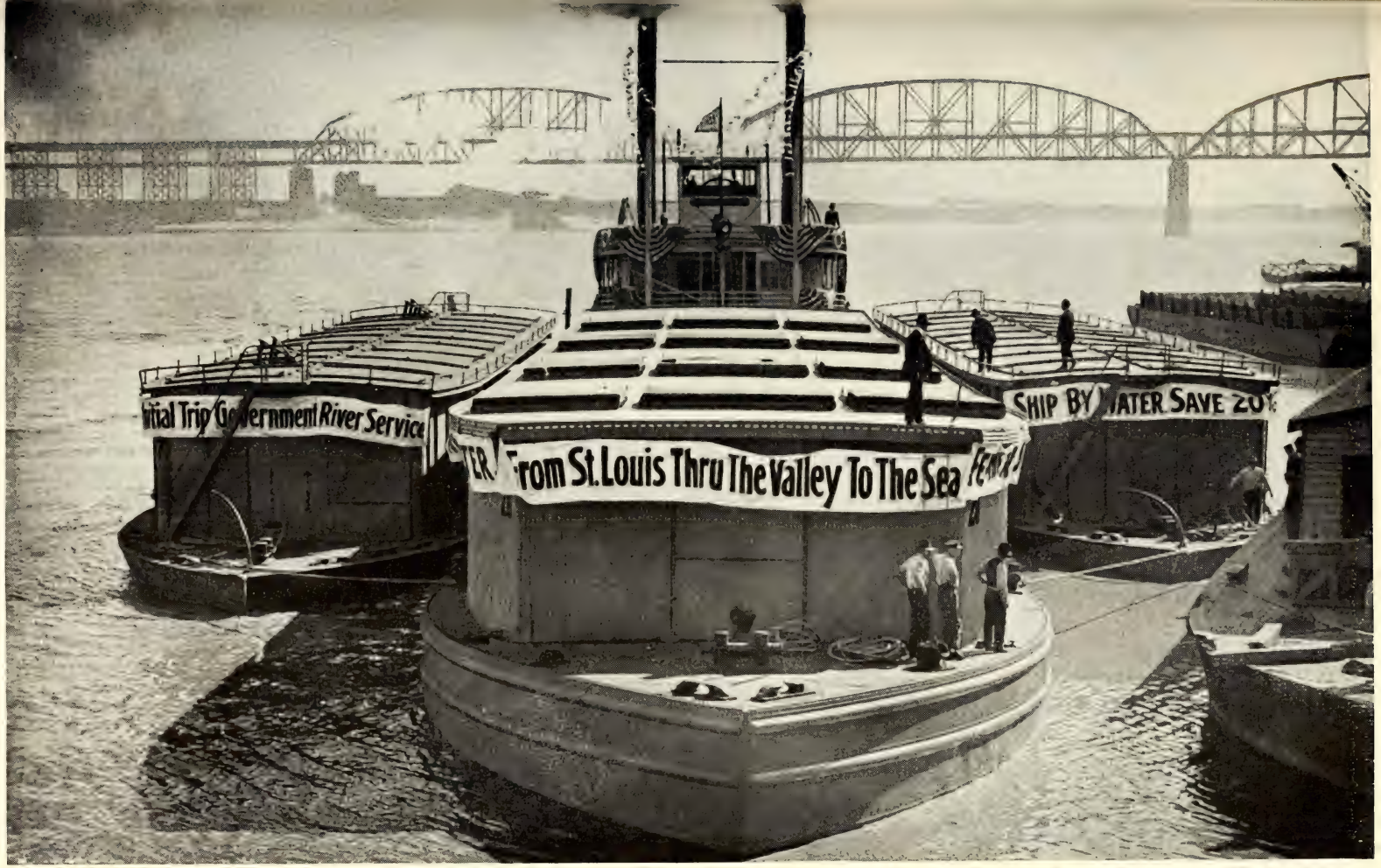
THE MEN WHO HAVE ACCEPTED THE GERMANS' GAGE OF BATTLE AND WHO ARE PLEDGED TO FURNISH AMERICA WITH SHIPS FASTER THAN THE U-BOATS CAN SINK THEM

Riveters, reamers, shipwrights, drillers, coppersmiths, plumbers, calkers—in all, the representatives of 30 trades—are employed in building the great merchant fleets which the United States requires in order to keep our troops supplied with food, clothing, and the munitions of war

GLOUCESTER SKIPPERS STUDYING "SCIENTIFIC" AT A NAVIGATION SCHOOL

Astronomers, explorers, and former sea captains are among the instructors in navigation in the schools which are equipping men to serve as officers of America's rehabilitated merchant marine



Photograph by P. R. Papin

REVIVING INLAND WATERWAY TRAFFIC BY THE USE OF STEEL BARGES

One of the many indirect blessings which are resulting from the war is the utilization of our rivers and canals as channels of commerce. Recently the business men of St. Louis reinaugurated a freight-barge service between the Missouri metropolis and New Orleans. The venture promises large development and expansion in the immediate future. It is also an important wartime measure, for it helps to relieve the congestion from which the railroads are suffering.

"LEARNING THE ROPES" ON BOARD ONE OF THE MERCHANT MARINE RECRUITING SERVICE TRAINING SHIPS

More than 28,000 American youths have been trained as merchant mariners since February. This number is being increased at the rate of 100 students a day; but there is room for all. Uncle Sam will need 175,000 men to man his merchant fleets at the end of the war.

HOISTING IN LIFEBOATS AFTER DRILL AT DOCK

The United States Shipping Board training ships, on which apprentices are taught to become seamen, spend five days a week at sea and two days at their base. The stay in port is not allowed to interfere with lifeboat drill.

that manufacture the hundreds of parts necessary to the building of a big steel steamer. So long as these parts are for a given size and type of ship, they are made to an exact pattern and dimension.

Similarly, when the ship-buyer wants, say, an 8,800-ton cargo vessel, under the standardization process he knows to whom he can turn for a vessel of that size and of the type that he desires. It is just like the automobile buyer of today, who knows where he can get a car of certain horsepower, size, and design. The saving that took place in the steel mill and in the industrial plants will benefit the buyer.

The comparison, in my mind, between automobile factories and "ship factories" is more real than mere theory. I think that our plan for standardizing ships will work out in a practical way, just as the standardization scheme in the automobile industry has been brought about.

The great object to be attained from all this, of course, will be the greater speed in tonnage production. That is the imperative need of today, and so long as the war lasts the demand for rapid ship construction will remain. Every mile gained by American armies in France calls for more tonnage, for with the lengthening of our lines of communication and the strengthening of our man power abroad the need for more food and munitions will increase.

By January 1 we hope to have completed the great bulk of requisitioned tonnage that was on the ways when the United States entered the war. That will mark the definite turning point in our ship production. By that time we will have put into effect our standardization plans, and then, I firmly believe, America's shipbuilding machinery will be running at higher speed and greatly increased efficiency.

Photograph by Leon H. Abdalian

A VIEW OF THE WATERFRONT AT BOSTON

The war has imposed a burden on the shipping facilities of the New England metropolis second only to that which is being borne by New York. How best to improve the equipment of the docks and warehouses of all our Atlantic and Gulf ports, both for immediate needs and for after-the-war commerce, is one of the responsibilities of the Port and Harbor Facilities Commission of the United States Shipping Board.

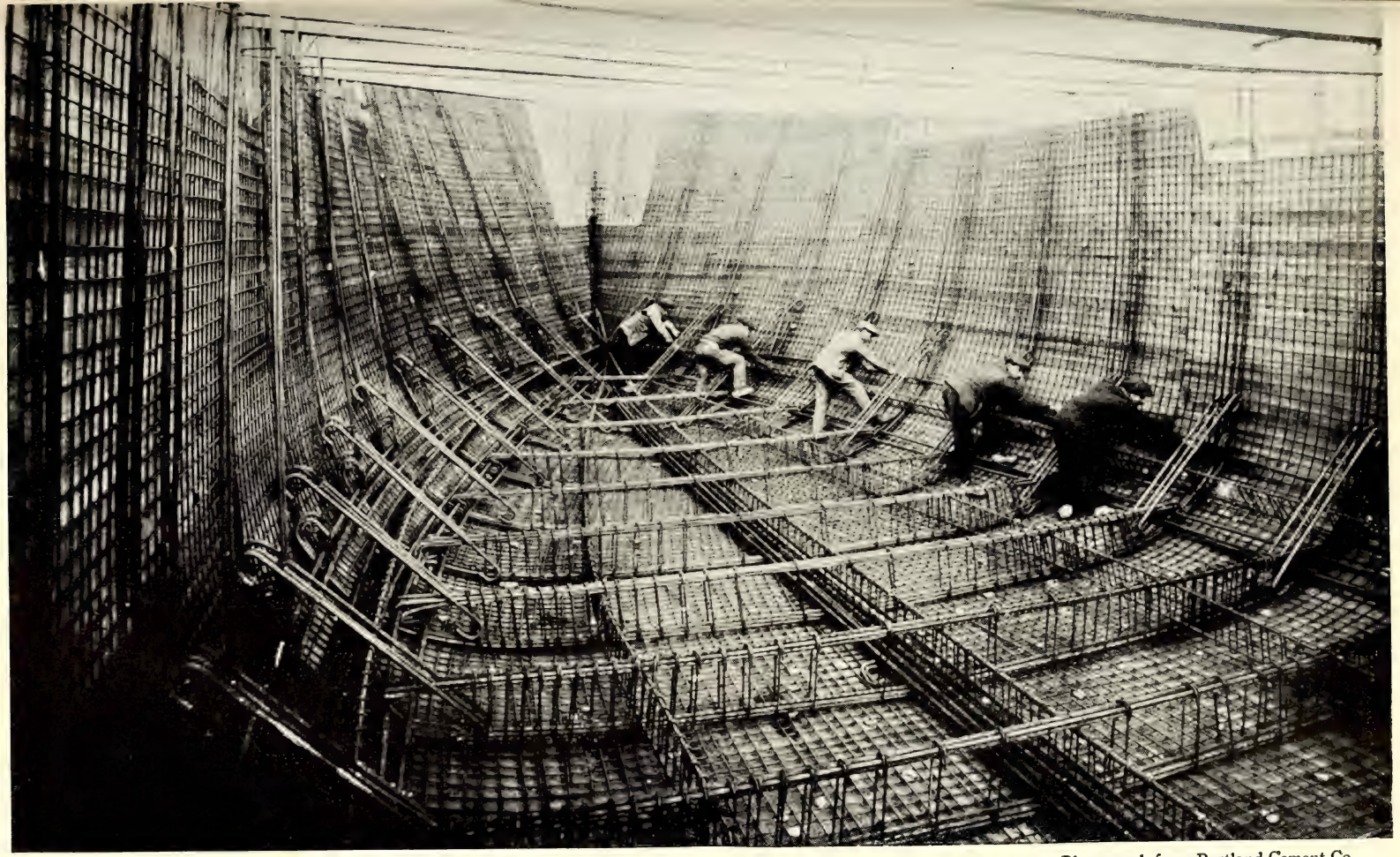
Photograph by L. P. Gallagher

LOADING AND UNLOADING CARGO SHIPS ON THE GREAT LAKES HAS BEEN DEVELOPED TO AN ECONOMIC SCIENCE

Many are the object-lessons which the Great Lakes fleets furnish to the salt-water ship owner and operator. The big ore-carriers of our inland waters use only a little more than half an ounce of coal in carrying a ton of freight a mile, while gigantic unloaders, lifting 17 tons at a time, can free a ship of its ore cargo at five cents a ton. Regardless of low wage scales of other lands, no maritime country in the world could compete with the United States on the Great Lakes, with its highly organized and wonderfully developed industrial machinery for handling a big job in a big way.

THE "FAITH," ONE OF THE LARGEST CONCRETE SHIPS EVER LAUNCHED

The chief arguments in favor of the concrete ship are cheaper and quicker construction and the employment of less skilled labor. To build a concrete vessel, a skeleton is employed which is packed round and filled in with concrete. Strong under compression, but with comparatively no tensile strength, this defect is remedied by reinforcing with steel rods.



Photograph from Portland Cement Co.

MAKING READY THE STEEL BONES OF A CONCRETE SHIP

The United States has established five shipyards of four ways each where concrete vessels are being constructed. The Shipping Board, however, has not in recent months sought to expand the activities of the concrete yards for the reason that the facilities for the production of power equipment for ships have not been sufficient to meet the hull-producing capacity of the steel and wood shipyards. A steel ship, it is estimated, is from 15 to 20 per cent more efficient as a cargo-carrier than a wooden or concrete ship of similar tonnage.

Photograph from the Globe Photographic Service

THE HARBOR AT CHICAGO, AN INLAND CITY WHICH HAS POINTED THE WAY FOR SOME OF OUR SEABOARD SHIPPING CENTERS

Perhaps because its water-borne commerce did not grow so rapidly as to outrun the imagination of the city's builders, the shipping facilities at Chicago have kept pace with the needs of the time much more effectively than the facilities of some of our Atlantic, Gulf, and Pacific seaports

Photograph by A. E. Young

TWO ICE-BOUND SURVIVORS OF A WINTER'S GALE ON THE GREAT LAKES

When our ports and harbors are so equipped that freight can be as expeditiously handled for sea-going craft as for the Great Lakes fleet of ore-carriers, the United States can pay higher wages to its shipbuilders and to its mariners and still compete with other nations in carrying the world's commerce.

RETURN TO
Roland Case Ross

THE WAR AND OCEAN GEOGRAPHY

By the Editor

SO FAR-REACHING have been the effects of the great world effort to throttle autocracy before autocracy could throttle the liberty of the human race that one might catalogue the entire range of human activities without writing down a single interest of mankind that has not been affected in greater or less degree. Yet it is difficult to find one interest, except the larger one of human freedom, more radically touched than that of the seas.

Twenty-odd million tons of shipping lie at the bottom of the ocean or float around as helpless derelicts which multiply the dangers of the deep. And with these ships has gone to Davy Jones's locker such an array of merchandise and munitions as no one ever dreamed would be his—beef and flour that might have saved millions from the threshold of starvation; railroad engines that might have moved the trains of a nation; munitions that might have sufficed the cause of victory in most of the wars of history.

Some day the war will be over, a peace that will make the whole world a parliament of man will be signed, and the race will be permitted, unshackled from its fear of the hydra-headed Hun, to settle back into the pursuits that make for its well-being.

THE CALL FOR GREATER KNOWLEDGE OF THE SEA

When that day comes the ocean will have new interest; for commerce, unfettered and free, will move up and down its lanes as never before. The world will be a family of nations taught by the sacrifices of many a trying hour to think more in terms of world welfare and less in terms of local advantage.

In that day there will be urgent demand for every ship that we are now calling into being for the world purpose of the moment—the annihilation of autocracy. Not only so, but there will be a demand for every ship that the shipyards of the nations can build in the years that lie ahead.

If world peace engenders international trade and international trade demands expanded shipping, expanded shipping in its turn will call for a closer knowledge of the sea. It may be true that the principal ship lanes of the ocean are almost as definitely traveled and marked as a Lincoln Highway or a Long Island boulevard, but withal, our knowledge of the bounding main is only fragmentary.

To begin with, the area of the sea is about three times as large as that of the land, and although as long ago as 1904 the governments of the civilized world had gotten together as many as twenty-five million observations of every kind and sort from the logs of merchantmen, warships, and government vessels, and although the results of a single expedition have filled over fifty massive quarto volumes, what we know about the sea is but the primer of the things it has to reveal.

OUR FRAGMENTARY SOURCES OF INFORMATION

Imagine men in airships cruising over a strange country, flying above miles of clouds, and once in a while dropping a sounding line down to earth and now and again letting down a dredge or a trawl; and suppose that country were the war zone in Europe. Do you think that under such conditions they would learn much about what was happening down below?

They might happen to sink their sounding tube into blood-sodden earth, or their dredge might chance to dig up a piece of shrapnel or a dead rat, while their trawl might catch a butterfly or capture a bumblebee; but certainly the specimens would not give a picture of the geology of the land, nor the things brought up by dredge and trawl afford an insight into what is going on at the bottom of the ocean of air, or of what inhabits the floor of that ocean.

Little wonder, then, that we marvel at

Photograph by Frederick I. Monsen

A DIVER IN THE HARBOR OF ST. THOMAS, VIRGIN ISLANDS

Lower the surface of the ocean 600 feet and you would transform the geography of the earth. Asia and North America would be united by a strip of land some 1,500 miles wide; the Dutch East Indies and Borneo would be tied to the continent of Asia; New Guinea would be a part of Australia; the North Sea would be only a narrow gulf off the point of Norway; Ireland and England would be one and a part of continental Europe; a traveler could go dry shod from Good Hope to Cape Horn via London, Berlin, Bagdad, Bombay, Pekin, Tokyo, Sitka, San Francisco, Washington, and Buenos Aires.

how much has been learned about the seas, the while we realize that what we know is much less than the proverbial drop in the bucket as compared with what remains a mystery.

The most impressive thing about the sea is its shallowness as compared with the size of the earth, and its depth as compared with the height of the land. If you were to take a globe six feet in diameter and excavate the deepest trench of the ocean thereon, it would be a bare pin-scratch deep—about one-twentieth of an inch.

Photograph from Mrs. Alexander Graham Bell

CUTTING UP WHALES ON THE SHORES OF NORWAY

The whale is the largest ... museums
land or water.

THE DEPTH OF THE SEA AND HEIGHT OF THE LAND

And yet so profound are the depths of the sea that the bulk of the water in it is fifteen times as great as the bulk of the land that rises above its waves. In its deepest trench the tallest mountain on the face of the globe could be buried and ships could still pass over the spot with a half mile of water under them.

The average depth of the ocean is more than two miles—about 12,480 feet, the oceanographers estimate. On the other hand, the average height of the land is less than half a mile—about 2,250 feet. How much further beneath the waves the sea bottom lies than the land crest above them is shown by the fact that while only one per cent of the land rises to an altitude of 12,000 feet, 46 per cent of the ocean's floor lies under more than 12,000 feet of water.

The relative height of the land surface and the sea bottom is about in keeping with their relative areas, there being 71 acres occupied by the sea for every 29 held by the land. If it were possible to drain off the upper 10,000 feet of the waters of the sea and to lay bare the floor that lies under it, the territory thus recovered, added to the land now above the sea, would give only a fifty-fifty division between land and water.

THE CONTINENTAL SHELF

The oceans as we know them are larger than the true ocean basin. As a monument is always planted on a base, so the continents have broad under-sea bases upon which to rest. To the oceanographers there is a line known as the 100-fathom line, which largely parallels the shore-line, but which is sometimes as much as several hundred miles out to sea. When that line is reached the bottom suddenly begins to slope down toward the abysmal depths.

The floor lying landward from this line is known as the continental shelf, and it is upon this broad shelf, with an aggregate area three times as large as that of the United States, that the continents are planted. By overflowing this vast area of slightly submerged territory, the oceans gather unto themselves ten million square miles of territory that in elevation belongs more to the land than to the sea.

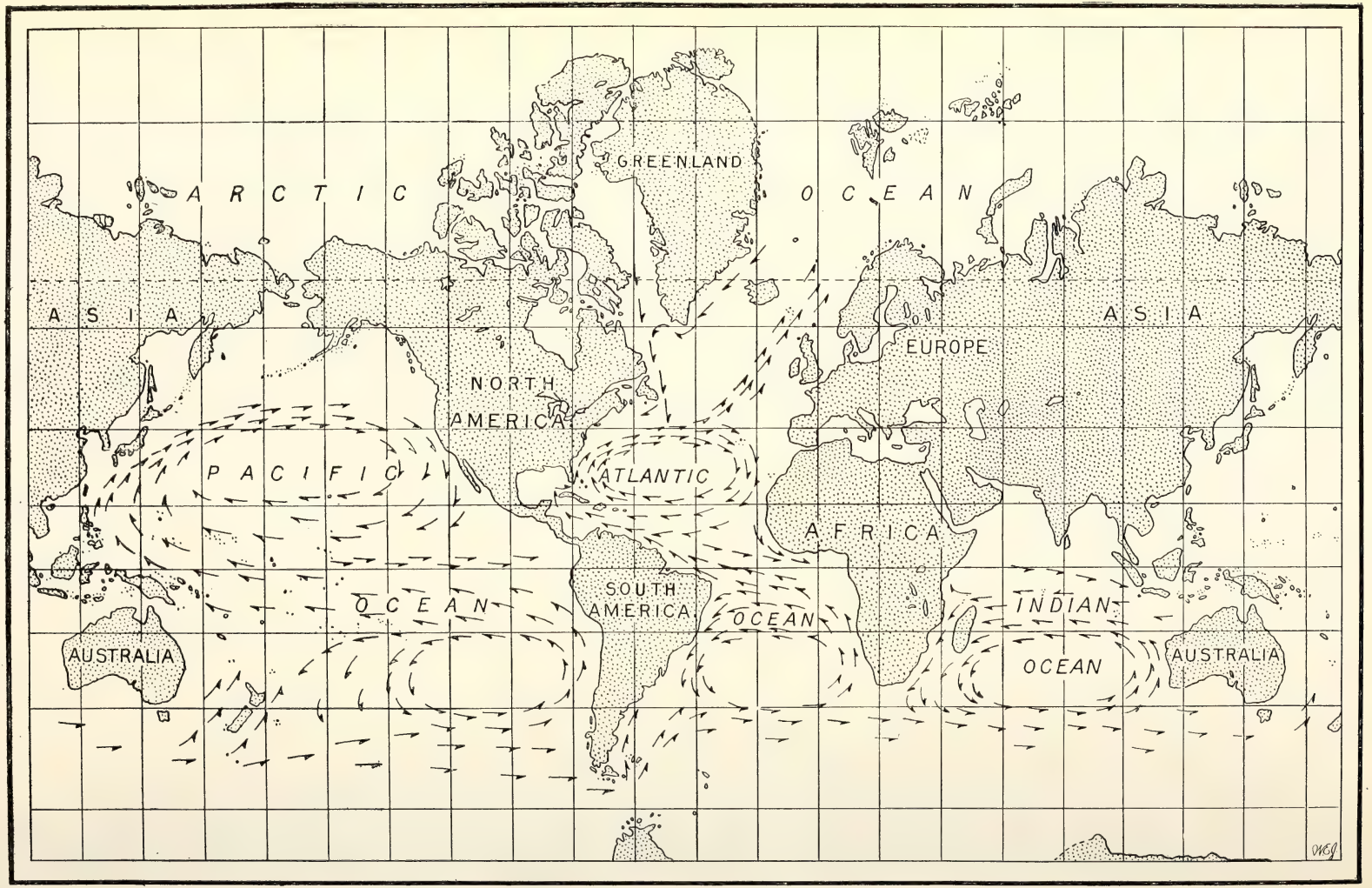
As a matter of fact, the continental shelf lies in part under water and in part above, the part above being the alluvial plains of the continents. Where these plains are broad the shelf usually is broad, and where they are narrow the shelf is usually narrow. For instance, the plain on our Atlantic coast is broad, and there is a corresponding breadth to the continental shelf. On the Pacific coast the alluvial plain is very narrow, and the 100-fathom line is correspondingly close to shore.

WHAT THE CONTINENTAL SHELF COSTS MANKIND

From a practical standpoint, the part of the sea of most immediate interest to man is that which rests upon the continental shelf. Here are situated all the seaboard cities. Wherever the ocean lanes may meander up and down the briny deep they begin on the continental shelf and end there. But for that shelf there would be no bays or gulfs, no harbors and no havens, for the boundaries of the true ocean basins are infinitely more regular and less indented than the shore-lines. Ocean-bound commerce would be vastly inconvenienced if it had to dispense with all the advantages that the continental shelf brings to it.

On the other hand, that shelf is a source of much difficulty to shipping and of much inconvenience to humanity. Upon the ten million square miles of territory upon which the sea has such a shallow lien a population equal to that of Europe and America might live. Aye, more than that—it is all practically level, the recipient of uncounted ages of rich contributions of fertility brought down by the rivers from the land, and it might support a population as dense as was that of Belgium before the hob-nailed boot of Hun warfare was set upon that smiling and teeming land.

Count the hundreds of millions of dollars that the nations of the earth spend on harbor dredging and coast-water surveying; figure up the tremendous losses of shipping tossed upon submerged rocks by raging seas; consider the losses involved in the unending warfare between



A MAP OF THE WORLD, SHOWING THE PRINCIPAL OCEAN CURRENTS

Through the seas run mighty rivers—some warm and life-giving, others from the icy poles. The Gulf Stream alone discharges a greater volume of water through the Florida Straits than is borne seaward by all the rivers of all the continents.

sea and shore, and you will begin to see that, even with all its blessings of safe harbors, land-locked bays, and havens of refuge, the continental shelf is not without disadvantages to mankind.

After peace comes again to bless mankind, and the nations, freed from the menace of war, are able to devote all their remarkable energies to trade, one of the first phases of oceanography that will command wide attention will be the shallow-water system fringing the continents. It took seventy million dead-weight tons of ocean shipping to carry the commerce of the world before the present war. That it will take vastly more to carry the water-bound trade of the years that follow is patent to all who have studied the situation.

The war has taught the world in thunder tones the interdependence of peoples and the interrelation of nations, and at the same time it has shown how much more mankind can accomplish when it is doing its utmost than when it lives as in the easy-go-lucky days of other years. And nations hereafter will not be content with the slow methods of the past.

HOW THE SUBMARINE MAY SERVE HUMANITY

With more ships afloat than there were before the heartless Hun ran amuck with the submarine, there will be a greater demand for minute surveys of all shallow water in coastal territory—thousands of square miles will need even the intensive method of the wire drag, which does not trust to soundings to reveal pinnacle rocks, but touches every square inch of the water at the appointed depth, and thus makes sure that nowhere is there an obstruction reaching above it.

It is probable that the submarine, an American invention prostituted to foul use by the Hun, will be rescued from its ignoble use and made to serve humanity where now it outrages civilization. Able now to descend to the bottom hundreds of feet below the surface, it is not improbable that before many years have passed submarine expeditions will take the place of polar expeditions and many mysteries of the sea will be solved.

One of the pressing problems of the after-the-war period will be that of the derelict. Among the millions of tons of shipping destroyed by the submarine, it is too much to hope that every ship torpedoed beyond the redemption of the salvage forces now lies harmless at the bottom of the ocean. That some of them are drifting derelicts, adding their menace to navigation, is certain.

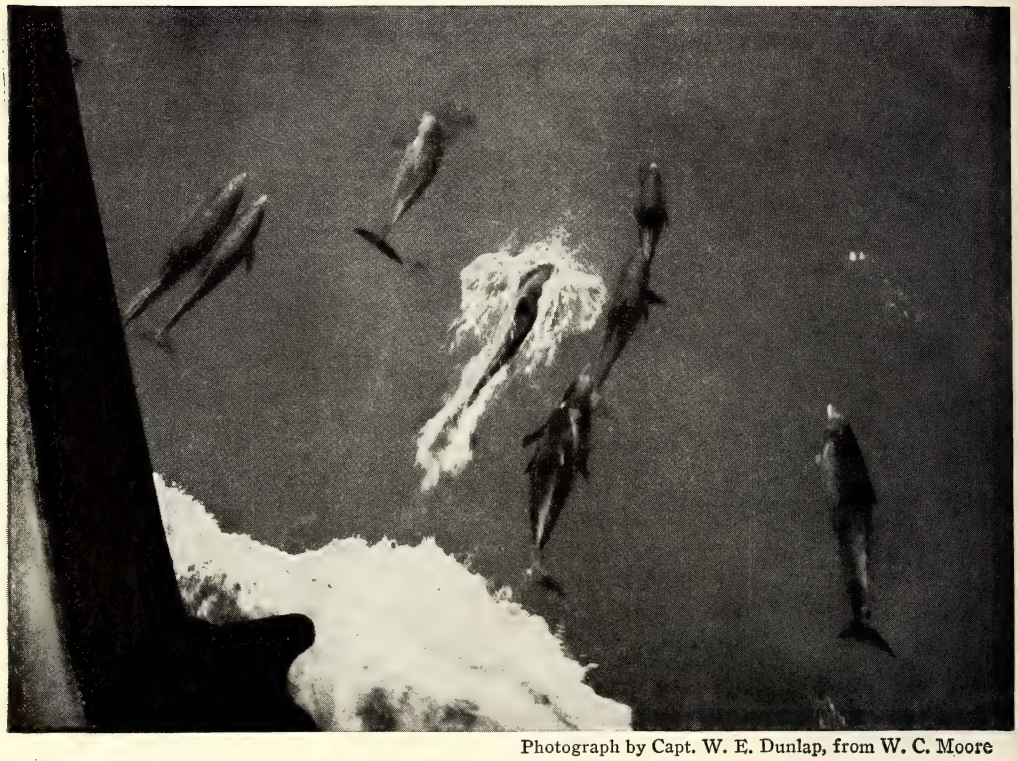
STRANGE STORIES OF DERELICTS

How hard it sometimes is to send a ship to the bottom is strikingly shown by the experience of the *San Francisco* in destroying the derelict three-master *Drisko* a decade or so ago. That derelict was only 248 tons, but she was lumber-laden. The officers of the *San Francisco* first tried to tow her to port, but found that impossible. Then they attached three 30-pound guncotton bombs to her keel and set them off; but still she floated. Five more bombs were set off; these broke her back and frames, but still she refused to go to the bottom. Then the *San Francisco* rammed her amidships and broke her in two, releasing the cargo; but even after that it took several shells to drive the after part of the staunch old schooner down into the jurisdiction of Davy Jones.

Even in peace times ships are often reported missing and appear to have been "sunk without trace." It is believed that most of such catastrophes are the results of collisions with derelicts. How many more such collisions there will be in the future may be imagined when it is stated that for two years the number of derelicts has greatly increased and the steps for their destruction have been much reduced.

KEEPING TAB ON THE DERELICTS

In normal times the Hydrographic Office of the Navy Department keeps careful check on the derelicts. Every ship that sights one of these menaces to navigation reports its location. The names of some of them remain visible, while others are susceptible of identification by their appearance. The Hydrographic Office gives each wreck and derelict a serial number and plots its position on a map. Each report is registered with an identification number. In this way, by a system of cross-checking, it is possible to identify each derelict, to determine the



Photograph by Capt. W. E. Dunlap, from W. C. Moore

A SCHOOL OF PORPOISES PLAYING AROUND A SHIP

Every foot of the ocean-bed traversed by the cables of the world has been surveyed. Sometimes examination of a cable reveals the fact that its coating of gutta percha has been melted by contact with submarine fire. Hundreds of deep-sea creatures attach themselves to these cords of communication, and thus live and die within a fraction of an inch of the electric impulses which tell the news of the world.

direction of its drift, and usually get it so well located that the Coast Guard cutters may run it down and sink it.

The information contained on the Hydrographic Office derelict map is transferred from time to time to the pilot charts, so that navigators may know where to be on the lookout for the semi-submerged hulks into which ships so often run in foggy weather.

WANDERERS ON THE FACE OF THE DEEP

In peace times there is no other menace to navigation as dangerous as the derelict, unless it be the submerged iceberg, such as sank the *Titanic*. Refusing to stay in one location, yielding to no law of navigation, hiding most of her hulk beneath the waves, the lonely, desolate, moss-covered, weed-grown derelict, with deck or keel all but awash, comes out of the night or through the fog as an assassin out of a lonely alley, and woe to the sailor who has not detected her approach.

Drifting hither and yon, now forced on by the wind of a stormy sea, now caught in a current and driven along, these rudderless, purposeless wanderers cover many a weary mile, with only screaming sea-birds to break the monotony of the roaring gale or the soft surge of a placid sea. Sighted frequently for weeks together, now and again they disappear, often reappearing suddenly hundreds of miles away. As many as a thousand have been reported in a single year in the North Atlantic. The majority of them frequent the Gulf Stream.

Examining the records of the Hydrographic Office, one finds that in six years 25 derelicts were reported as having drifted at least a thousand miles each; 11 have 2,000 miles apiece to their credit, while three sailed 5,000 rudderless miles.

Photograph from Charles J. Glidden

PEARL-FISHING BOAT AT THURSDAY ISLAND, AUSTRALIA

A man of medium size sustains a pressure of 30,000 pounds at sea-level. How much more he can endure is shown by the fact that a diver can safely go down 204 feet, which adds 180,000 pounds to the pressure his body must bear.

But the classic story of the wanderings of a derelict is that of the *Fannie E. Wolston.* Abandoned October 15, 1891, off Cape Hatteras, she traveled northward in the Gulf Stream. When off Norfolk, Va., she changed her course and headed across the broad Atlantic toward the shores of Africa. On June 13, 1892, she was sighted half-way across. Then she headed southward for more than 300 miles; then shifted her course to the northeast for another 200 miles, retraced her track for several hundred miles, turned again and went in the opposite direction, like a shuttle in the loom instead of a ship upon the sea.

Then she took another tack and headed west for nearly 400 miles; then shaped her course north for 300 miles, and then headed east again for 700 miles; so that in January she was almost in the same latitude and longitude that she had been in the previous June. In the following May she was a thousand miles away from where she had been in January, on the border of Cancer and midway between Florida and Africa.

Again she headed toward America for 600 miles, and repeated her shuttle-in-the-loom stunt. Then followed many long months of erratic zigzags, and she was sighted for the last time 250 miles off Savannah, Ga. She had remained afloat and had outgeneraled the waves for two years and a half, during which time she had sailed more than 7,000 aimless miles.

SHIPS OF MYSTERY

Verrill, in his splendid book, "The Ocean and Its Mysteries," tells us that upon two occasions ships have been found adrift sailing aimlessly about, under full sail, in perfect condition, but without a soul on board. When boarded, everything was found undisturbed and in

Photograph by Charles F. Holder

WHERE THE CONTINENTAL SHELF RISES ABOVE THE SEA

As a monument rests upon a base, so the continents have broad undersea bases upon which they rest and which oceanographers call continental shelves. The continental shelf ends at the 100-fathom line, which is sometimes several hundred miles out at sea, sometimes very close inshore.

order. Pots of partly cooked food were on the galley stove, charts and papers were spread upon the cabin table, and nothing was there to indicate how or when or whither skipper and crew had gone. He also tells of a derelict floating keel up which was destroyed by a naval ship. When the first shot was fired a multitude of cats appeared out of the hold. Prisoners of fate, they were the descendants of the ship's cats and had found imprisoned rats as prolific as themselves.

Another matter of pressing moment that seems destined to occupy a larger place in oceanographic research after the war is the question of sea food. The great conflict has demonstrated how close is the margin between food production and food consumption, and how much more pressing the food question is destined to grow in the years of peace and racial expansion that lie ahead.

THE OCEANS' INEXHAUSTIBLE FOOD RESERVOIRS

The oceans literally teem with food. The man who declared that humanity is a race of herring-catchers might have overstated the case, but that the sea abounds in food-fishes and fishes fit for food is well known. As soon as we begin to study the subject of ocean fisheries, however, we come up short against the fact that what we really know about the inhabitants of the sea is startlingly limited.

It was not so long ago that the fishermen of the North Sea believed that whales brought the herring in toward shallow water—a conclusion they reached from the observation that schools of herring are frequently found in the vicinity of spouting whales. In 1906 there was a failure of the herring fisheries, and the fishermen blamed it on the Norwegian whaling vessels operating in that region.

Likewise, it is still a moot question whether or not modern fishing methods tend to deplete the supply, and whether artificial propagation of sea fishes is a sufficient counter-measure. A few years ago a British commission measured the intensity of fishing operations in the North Sea. Trailing bottles were set adrift, and it was found that more than half of them were recaptured. In certain localities they were captured at a rate that indicated 90 per cent retaken each season. Marked fish yielded largely similar results, and the conclusion was that a food-fish of adult size had at least three to one odds against its getting through the year uncaught.

And yet there is so little race suicide in the ocean that even such intensive fishing probably has no effect upon the available adult supply. For instance, the female turbot lays 8,500,000 eggs a year, and the cod has 4,500,000 to her credit. The female flounder lays 1,400,000, the sole 570,000, the haddock 450,000, and the plaice 300,000. The poor herring must be content with a meager 31,000.

Much remains to be learned about the migration habits of the world's food-fishes. Where do the salmon go after they leave the rivers? Why does the eel, as discovered sometime since by the Danes, go far out to sea, far to the south and west of the Irish coast, to spawn, and how do the countless hordes of delicate elvers find their way around the British Isles and into the continental rivers? Innumerable are the questions like these that the future will reveal to the oceanographers of a new day.

The problem of life in the ocean is one full of interest and pregnant with valuable lessons for mankind. Even at the bottom of the deepest trench in the abysmal region of the sea's bottom, where no ray of the sun ever penetrated, where Stygian night is perpetual, where freezing temperatures never cease and where inconceivable pressures prevail, the miracle of life still goes on. When you remember that the atmospheric pressure of 15 pounds per square inch means 30,000 pounds on a surface as large as an average sized man's body, and then consider that in some of the deeper places in the ocean the pressure is more than four tons to the square inch, or eight million pounds for a surface as large as a man's body, you will naturally wonder how any living thing can exist there.

QUEER CREATURES OF THE SEA

Yet eerie creatures do exist, even in the uttermost depths. Here is a fish swimming by with light-giving organs

Photograph by H. F. Reid

THE MOST FAMOUS OF MOUNTAINS, MOUNT ARARAT, IN ARMENIA

The peaks seen in the picture are Great Ararat (17,000 feet) and Little Ararat (13,000). They are about 7 miles apart and form the boundary of Russia, Persia, and Turkey, to each of which they partly belong. Once this great mountain was beneath the sea. Whether our good father, Noah, was an oceanographer or not, he was a splendid navigator, landing his ship safely upon a mountain top whose crest is now more than three miles above high tide at Alexandretta. Mount Everest, the land's highest peak, could be placed in the Challenger Deep, the sea's lowest trench, and still leave navigable water a half mile deep over its summit.

ranged in rows from nose to tail, on port and starboard sides, a fantastic miniature of an ocean liner, alight from stem to stern, gliding noiselessly through the perpetual night. There is another, with a well-defined searchlight with which to explore the blackness around. Here is a breathing caricature of a mermaid with binoculars, and there a creature whose eyes are upon the ends of long stalks reaching out from the head like sunflowers from the ground.

In size the inhabitants of the deep sea have as wide a range in the direction of microscopic minuteness as those of the land. It is hardly reasonable to suppose they would not range toward largeness as well. Indeed, there is evidence that immense creatures, with flesh of a texture hitherto unknown, exist in the ocean depths. Some years ago a strange object was washed ashore on the Florida coast. Photographs of this peculiar hulk and a piece of it were sent to Professor Verrill for examination. It measured twenty feet in length, forty feet in circumference, and weighed many tons. He found its flesh of a tough, fibrous nature, unlike any known, and concluded that this huge object was but a fragment of some monster of the sea, torn from it by some cataclysm of the deep.

STUDY OF OCEAN CURRENTS

Another phase of oceanography that will demand and receive close attention in the years when navies fulfill a new mission—the illumination of the dark places in man's knowledge of the sea—will be the ocean currents. The effect of these great rivers of the sea upon the welfare of the human race is past imagination. It is said that the Gulf Stream carries enough heat toward Europe every 24 hours to melt a mass of iron as large as Mt. Washington.

Rear Admiral Pillsbury, in his remarkable article in the GEOGRAPHIC MAGAZINE describing this remarkable river of the sea, says that every hour there passes through the straits of Florida the enormous total of ninety billion tons of water, carrying enough salt to load many times over every ship that sails the main. Through these straits the stream is 40 miles wide. It carries more water than all of the streams of the world bring down from the land to the sea.

In each of the four quarters of the globe there is a wonderful circulatory system—the heavy, cold waters of the polar seas rushing equatorward, and the light, warm waters of tropic oceans sweeping back, giving a huge swirl not unlike the motion of water driven around the bottom of a basin by the hand.

Vessels and débris caught in these currents often play uncanny tricks. In 1905 the *Stanley Dollar,* an American freighter, went upon the rocks at the entrance to Yokohama Bay. Her life-preservers were washed out as she lay upon the beach upon which she was run to prevent her sinking.

In 1911 two of her life-preservers were picked up on the shores of the Shetland Islands, north of Scotland. How they reached there is one of the puzzling questions that so often arise anent the sea. Did they sweep up the Asiatic coast, through Behring Strait, and then through the Northwest Passage and Baffin Bay, and thence by Iceland to the Shetland Islands? Or did they, after floating through the Northwest Passage, get into the Polar Current and sweep down the Atlantic to the point where that ocean river dives under the Gulf Stream, to be picked up there by the latter current and carried to the Shetland Islands?

It has often been urged that the American Indian came to the shores of the New World an unwilling voyager on the bosom of the Japan Current. Certain it is that all of these vast rivers of the ocean have played an incalculably important rôle in the affairs of the human race, and that a more exhaustive study of them than has yet been made holds many revelations in store.

DOES A SINKING SHIP GO TO THE BOTTOM?

One of the questions that is often asked is whether a ship, sinking in deep water, goes to the bottom, or whether she finds her level in some vertical depth zone and drifts on forever. This question sprang into great prominence when the *Titanic* went down and has been asked frequently during the present war. The answer is,

she goes directly to the bottom, else how could a dredge or a trawl be sent down five miles.

That same question was asked by the sailors on the *Challenger* while on its celebrated voyage during which material was gathered for fifty volumes about the sea. One of their number died and was buried in particularly deep water. They sent a delegation aft to ask those on the quarterdeck whether Bill would go to the bottom or would float around at some fixed level. They also wanted to know what Bill would be like when he got to the bottom.

WHEN SHIPS IMPLODE

One of the strange things that happen when ships sink is that implosions occur. These are inward burstings, often with a force as tremendous as the outward burstings caused by explosions of gunpowder. As the ship sinks into deep water, air-chambers that do not fill up are burst inward with a force proportionate to their resistance. If there be corked bottles in the stores that are not entirely full, the corks are driven in or the bottles burst.

With what force these implosions occur may be gathered from an experience of a scientific expedition. A thermometer was let down into very deep water, wrapped in protecting cloth. When the line was drawn up the cloth contained no thermometer. Instead it contained a lot of impalpable white stuff resembling snow. The implosion had not shivered the thermometer into the proverbial thousand pieces; it had simply transformed it into dust. Wood sent to the bottom of the deep places of the ocean has its very cells invaded and crushed and loses its buoyancy.

These are but a few outstanding phases of the wonders of the wonderful sea. They are only random paragraphs gathered from the remarkable chapters of the great Book of Nature that tells us of Old Ocean and his marvelous ways. The elder days of the becalmed mariners in the Doldrums are gone, and their amazing tales of Flying Dutchman and Wandering Jew, of ships that float about forever, bleached of canvas and rotten of rigging, with decks peopled by ghosts and skeletons—these are but classic myths, just as are the stories of corposants and monsters, recognized by all as such.

But the oceanographer has mysteries and problems to solve that make even the riotous imagination of the seasoned old salt seem tame in comparison. In the years ahead, America, with the Stars and Stripes gladdening every horizon, gleaming in every port, will vie with the maritime nations of Europe in promoting the efforts of the geographers of the sea to fathom its mysteries and increase its incomparable service to mankind.*

FOOD FOR OUR ALLIES IN 1919

By Herbert Hoover

United States Food Administrator

THERE is small prospect of a proper ending of the war before the campaign of the summer of 1919. Three and a half million fighting men of America, provided with the greatest mechanical equipment that has ever been given to any army, are being sent to France to attain that victory.

Even if Germany should suddenly collapse, however, and autocracy be completely overthrown sooner than now seems possible, the food problems of our Allies would remain unimproved, for America is the only quickly accessible reservoir available for the urgent needs of France, Belgium, Britain, Italy,

* The attention of the members of the National Geographic Society is called to an article on "The Gem of the Ocean: Our American Navy," by Josephus Daniels, Secretary of the Navy, in the Geographic for April, 1918, and to Rear Admiral Pillsbury's "The Gulf Stream," in the August, 1912, number.

Serbia, Greece, Roumania, and the famine-pinched neutrals of Europe. Peace or war, the American people are their Allied brothers' keepers, so far as food is concerned, for the next 12 months.

If autocracy is defeated in 1919, we will save a million American lives which will be expended if we are compelled to continue the struggle until 1920. To give this final blow in 1919 we have not only to find the men, shipping, and equipment for this gigantic army, but this army, the Allied armies, and the Allied civil populations must have ample food to maintain their strength.

We can do all these things, and I believe we can bring this dreadful business to an end if every man, woman, and child in the United States tests every action every day and hour by the one touchstone—does this or that contribute to winning the war?

SHIPS AND FOOD CLOSELY LINKED

The food program is no small part of this issue. To provide ships for our army, we have not only to build all that we can, but we must have the help of Allied shipping. In order that the Allies may provide this, they must take food ships from the more distant markets and place them upon the shorter run to the United States. We must decrease our imports of sugar, coffee, and tropical fruits.

Under these conditions, the demand upon us is for larger supplies. The conferences on food supply and shipping we have held in Europe enable us to estimate our burden. Compared with previous years, the Allied civilians and armies, our own armies, the Belgian relief, and certain neutrals who are dependent on us require the following round amounts from us:

	Average 3-year pre-war shipments *Tons*	Shipped year ending July 1, 1918 *Tons*	Must ship year ending July 1, 1919 *Tons*	Increase this year over last year *Tons*
Meats and fats (beef, pork, dairy, poultry, and vegetable-oil products)	645,000	1,550,000	2,600,000	1,050,000
Breadstuffs (wheat and substitutes in terms of grain)	3,320,000	6,800,000	10,400,000	3,600,000
Sugar (from United States and West Indies)	618,000	1,520,000	1,850,000	330,000
Feed grains (mostly army oats)	950,000	1,950,000	2,700,000	750,000
Totals	5,533,000	11,820,000	17,550,000	5,730,000

Even this program means further self-denial by the Allies next year. They are making this sacrifice in the common cause. We must maintain the health and strength of every human being among them or they will be unable to put their full strength alongside our own in the supreme effort. At the President's direction, I have assured them that "in this common cause, we eat at a common table," and upon entering these conferences in Europe we promised them that whatever their war-food program called for from us we should fulfill.

If we survey our ability to meet this definite promise to them, we find that while our wheat production this year is better than last year our production of other cereals is less. We have had severe losses through drought in many sections. On balance our resources are no greater than last year. We find, however, that we can give this increase in food supplies, of 5,730,000 tons over last year, and still have a margin over the amount necessary to maintain our own health and strength.

OUR ALLIES DENY THEMSELVES TO TRANSPORT OUR TROOPS

At best the Allied table will be less than ours, for the Allied peoples are denying themselves more in order to transport our soldiers. We can do no less than fill the ships they send us.

Of our imports, we shall apparently have sufficient sugar to maintain the present consumption and take care of the extra drain of the Allies from our markets, instead of compelling them to send their ships to the Far East. We can secure in sailing vessels the coffee we need, if no one makes an overbrew.

Of our own products we must secure a reduction in consumption and waste in the two great groups of, first, breadstuffs,

and, second, meats and fats—that is, in all bread and cereals, beef, pork, poultry, dairy, and vegetable-oil products. The average consumption of our people of breadstuffs amounts to about six pounds per week and of meats and fats to four pounds a week for each person. A reduction in consumption of less than one-half pound per week per person in each of these two great groups of foods would accomplish our purpose.

We wish to emphasize, however, that we do not want curtailment in the use of milk for children.

GREATER SIMPLICITY OF LIVING A NATIONAL NECESSITY

Some of our homes, by reason of limited income, cannot now provide more food than they should have to maintain health in the family. They cannot rightfully be asked to make the suggested reduction in consumption. But the great majority of our homes can do more than suggested.

We need even greater simplicity of living than last year among all that section of the community to whom foodstuffs are a secondary item in expenditure.

We estimate that nearly 9,000,000 people eat at our public eating places—hotels, restaurants, boarding houses, clubs, dining cars, and so forth. The food consumption in these places is larger than in the average homes. We are asking the proprietors and employees of these institutions to undertake in many particulars a more strict program than last year, and we are confident that they will willingly do this.

NOT RATIONING, BUT PATRIOTIC COÖPERATION

This is not rationing—a thing we will never have if our people continue to support us as in the past. We are simply making an appeal to the intelligence in the homes and public eating places of America to work out for themselves the means and manner of saving.

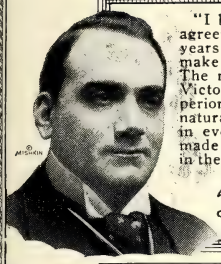
This year, as last, I believe we can accomplish the necessary ends by voluntary action of our own people. The willingness to assume individual responsibility in this matter by the vast majority is one of the greatest proofs of the character and idealism of our people, and I feel it can be constantly relied upon. Our simple formula for this year is to further reduce consumption and waste of all food.

We have so arranged the international food program that, except for a moderate substitution of other cereals in bread, it will not, we hope, be necessary to substitute one foodstuff for another, nor to resort to wheatless and meatless days. What we need is to reduce directly our consumption of *all* foodstuffs, laying especial emphasis on the staples. The Allies are in need of all the surplus of the great staples that we can provide.

It is necessary that every family in the United States study its food budget and food ways to see if it cannot buy less, serve less, return nothing to the kitchen, and practice the gospel of the clean plate.

OUR GEOGRAPHIC MILITARY HOSPITAL WARDS

The need for increasing the number of National Geographic Society Wards in the American Military Hospital, No. 1, at Neuilly, Paris, described on a following page, is well worthy of your attention.

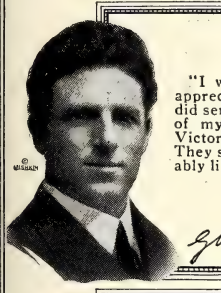


"I have an exclusive agreement for twenty-five years with the Victor to make records of my voice. The records made by the Victor process are far superior—in quality of tone natural reproduction, and in every detail—to those made by any other process in the world."

Enrico Caruso

"As any true artist must realize, it is of great benefit to 'sit in the audience,' as it were, and be the critic at one's own performance. In this way I have learned a great deal from listening to my records on the Victrola and can truly state that it has been my best teacher."

Geraldine Farrar



"I wish to express my appreciation of the splendid series of reproductions of my voice which the Victor Company has made. They seem to me remarkably lifelike and faithful."

Giovanni Martinelli

"The reproductions of the Victor Records are *wonderful*. It is my great desire now to seal up and preserve a complete set of my Victor Records for my children."

Louise Homer

To insure Victor quality, always look for the famous trademark, "His Master's Voice." It is on all products of the Victor Talking Machine Company.

"I am delighted to contribute a word of appreciation in favor of the Victor, and congratulate myself that my selections are brought before the public in so admirable a manner, by means of its wonderful merit."

Emma Calvé

Who knows more about music than the world's greatest artists!

What they think of the Victor

When selecting a musical instrument for your home, wouldn't you value the opinions of the world's greatest artists? Wouldn't you like to benefit by what they think of it?

Certainly no one is better qualified to judge a musical instrument! They know music. Their life-work is music. And what they say about the Victrola is of the utmost importance.

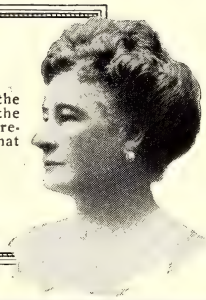
They not only endorse the Victrola, but they show their unbounded confidence in it by making Victor Records exclusively.

There are Victor dealers everywhere, and they will gladly play any music you wish to hear and demonstrate the various styles of the Victor and Victrola—$12 to $950 Saenger Voice Culture Records are invaluable to vocal students—ask to hear them.

Victor Talking Machine Co., Camden, N. J., U. S. A.

Berliner Gramophone Co., Montreal, Canadian Distributors

Victor Supremacy



"The Victor today is the most relentless but the most just critic, as it reproduces absolutely what the artist has done."

Ernestine Schumann-Heink

The fireman was not to blame

A GOING business is burning up!

Why doesn't the fire-bucket hop off the shelf and hurl its wet contents into the heart of the oncoming fire?

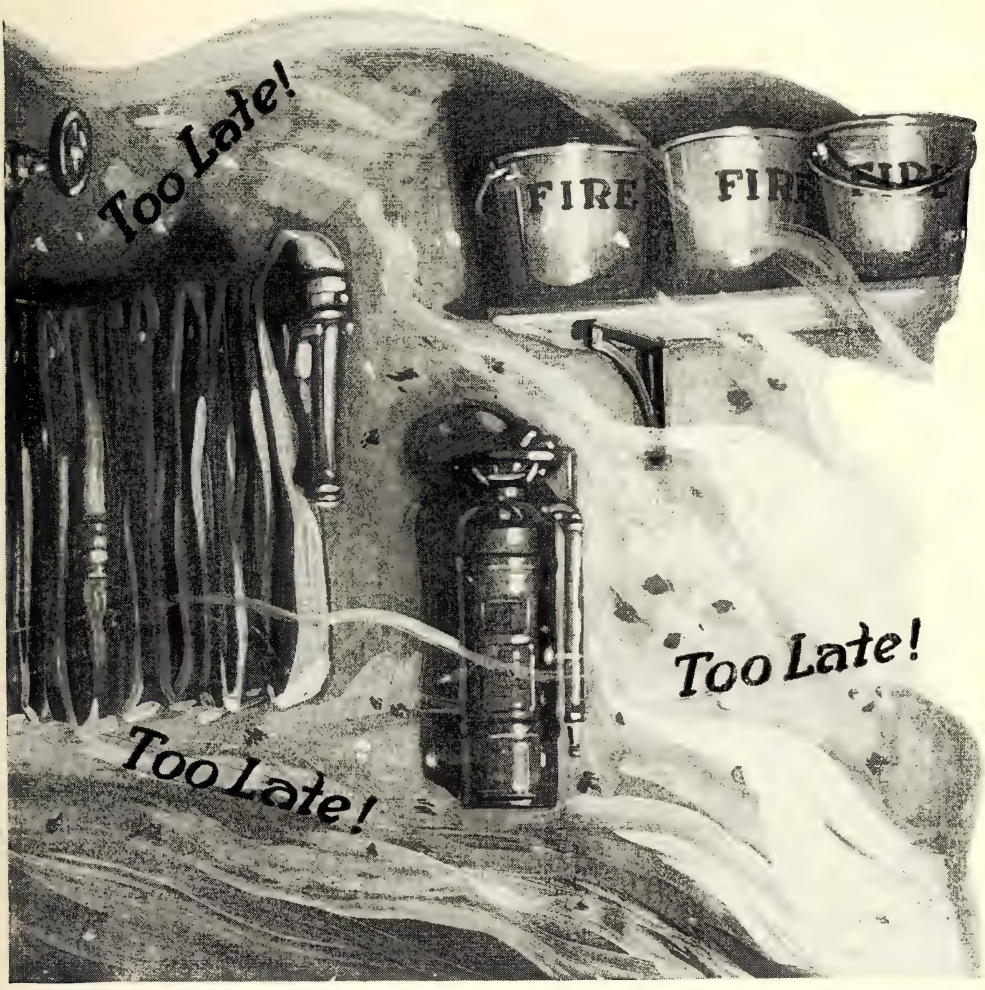
Why doesn't the stand-pipe hose unroll itself and the big valve automatically turn on the water?

Why doesn't the chemical-extinguisher tip itself upside down and pump itself dry?

That is what you think when you realize your business is being burned up. What you then want, to save your business, is *something* that will jump into action on its own hook, as if your business salvation was worth an effort.

Apparatus that depends on the human element will fail ninety-five times out of one hundred, says a great ex-fire chief of New York City.

Fire-buckets, hose, and chemicals are all right if somebody is there to use them. Fireproof walls, metal trim, metal furniture,



iron shutters, wire-glass, etc., are also valuable aids. But they can't put out a fire. That's the reason why all of them *combined* do not make a business as safe from fire as a Grinnell Automatic Sprinkler System does *alone*, nor earn as low an insurance rate.

Grinnells frequently reduce the insurance rate by two-thirds. For this reason a Grinnell System really costs nothing in the long run, and generally pays for itself in a few years by its own savings on insurance.

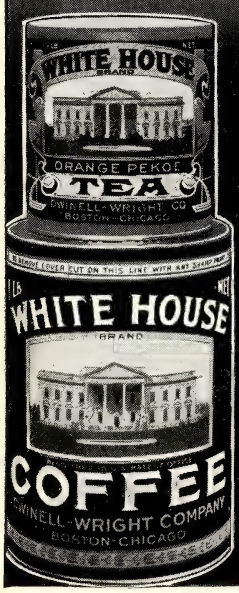
Even if you carry double the insurance you do, you would be the loser if your business were swept away by fire. One short hour of fire would set you back, disrupt your organization, cancel a lot of your profits.

That's why business men of America have put 25,000,000 Grinnell Sprinkler-heads on guard over their going businesses.

We can give you a few pertinent ideas about your own property if you will tell us your floor space, your insurance rate, and the amount of insurance carried.

Don't theorize—get the figures! Address the General Fire Extinguisher Company, 293 West Exchange Street, Providence, R. I.

Any Way ~ Any Time
White House Coffee and Teas



"None better at any price"

The meal is judged by the coffee you serve. Under all conditions and on all occasions White House Coffee gives pleasure and commands respect. Always sold in the air-tight, all-tin cans—never in bulk.

White House Tea is superb. It has a quality as distinct and superior as White House Coffee. *Five favorite* varieties in 1-4 and 1-2 lb. cans. Order by name "White House." Decline substitutes.

DWINELL-WRIGHT CO.
Principal Coffee Roasters
BOSTON CHICAGO

DUES

Annual membership in U. S., $2.00; annual membership abroad, $3.00; Canada, $2.50; life membership, $50. Please make remittances payable to National Geographic Society, and if at a distance remit by New York draft, postal or express order.

RECOMMENDATION FOR MEMBERSHIP

IN THE

NATIONAL GEOGRAPHIC SOCIETY

The Membership Fee Includes Subscription to the National Geographic Magazine

PLEASE DETACH AND FILL IN BLANK BELOW AND SEND TO THE SECRETARY

_____ *191*

To the Secretary, National Geographic Society,
Sixteenth and M Streets Northwest,
Washington, D. C.:

I nominate _____

Address _____

_____

for membership in the Society.

_____

_____
Name and Address of Nominating Member

When Belgium Stemmed the Tide

Four years ago the Belgian Army, war-worn and weak in numbers, confronted the Germans on the Yser. From Liege to the last narrow strip of their country they had resisted the invaders inch by inch, glorious even in retreat.

At the Yser the Belgians performed a signal service to the Allied cause by holding the Germans while the gaps were being closed in the Franco-British line to the rear.

Four years have passed, and the same nations are still at death grips along the Western front. America, too, is there, and has this opportunity because the Belgians kept the enemy from crossing the Yser long ago.

The same unfaltering courage, the same inspiration for sacrifice in our army abroad and in our citizens at home will give us victory.

The complete mobilization of the whole people is necessary and the telephone service has an increasingly important part in speeding the national effort.

More than 12,000 members of the Bell System are in military service. Those that remain at home must fill the gaps and do their utmost, with the co-operation of the public, to help win the war.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

W.S.S.
WAR SAVINGS STAMPS
ISSUED BY THE
UNITED STATES
GOVERNMENT

"Mention the Geographic—It identifies you."

Photograph by H. T. Ellis, Paris

A Tribute to a Sleeping Hero: In the National Geographic Society Wards

National Geographic Society Wards in the American Military Hospital No. 1, Neuilly, France

Picture to yourself the feeling of one of our fellow-members or his boy upon being brought into this hospital and placed in a comfortable bed provided for him by his own friends. Can you imagine a better tonic or a more comforting thought to a sick or wounded man than the realization that he is almost at home?

Thousands of members of the National Geographic Society and the sons of a great many more have answered our country's call to arms. Numbers have already gone to France, and others will follow shortly to place the Stars and Stripes side by side with the battle standards of our allies in this titanic struggle for freedom and everlasting peace.

There will be no overhead expense in the handling of the National Geographic Society's fund, and every dollar will be expended for equipment and maintenance of the ward.

No matter how small or how large your subscription, it will be welcome and proper acknowledgment made. For particulars read "A Day in the Geographic Wards," by Carol Corey, in the July issue of the Geographic.

(CUT HERE)

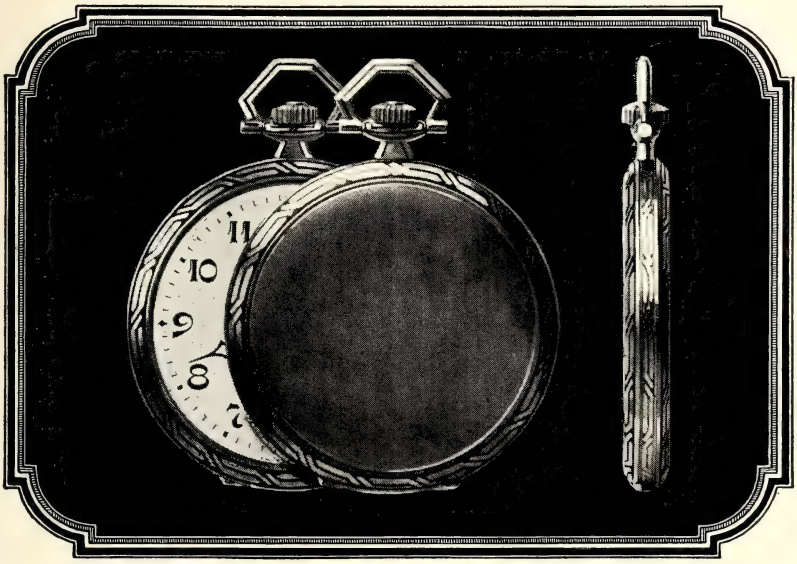
Gilbert Grosvenor,

Chairman, National Geographic Society Ward Fund,
16th and M Streets N. W., Washington, D. C.

I enclose $_____toward the National Geographic Society Wards (twelve beds each) in the American Military Hospital No. 1, Neuilly, France. Two wards have already been established.

*(Name)*_____

*(Address)*_____



No. V514G Enamel Inlaid, chased center, Gruen Verithin model. Solid green gold, $100 to $250

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Made and sold under the management of an American organization

THE Gruen movements, famous among horologists for their precision time-keeping, are made under American ownership in Madre-Biel, Switzerland, by a modern guild of that country's best craftsmen.

The movements are then brought to the Guild Workshop in America, at "Time Hill," Cincinnati. Here the beautiful Gruen cases are hand wrought and in them the movements adjusted and timed.

How the Gruen Pat. Wheel Construction made an accurate watch thin. The shortness of staff makes watch more durable.

When you own a watch with the name "Gruen" on the dial, you own the finest modern example of Swiss watchmaking art—with the complete service of an American organization behind it.

The Gruen Watch is obtainable only through one of 1200 Gruen jeweler agencies—the best in every locality—to whom the sale is confined. Duplicate repair parts may be had through these agencies at all times.

Fixed Prices	Gruen Verithins	$30 to $200	Ultrathins		$225 to $350
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Owing to war conditions, prices quoted are subject to change without notice.

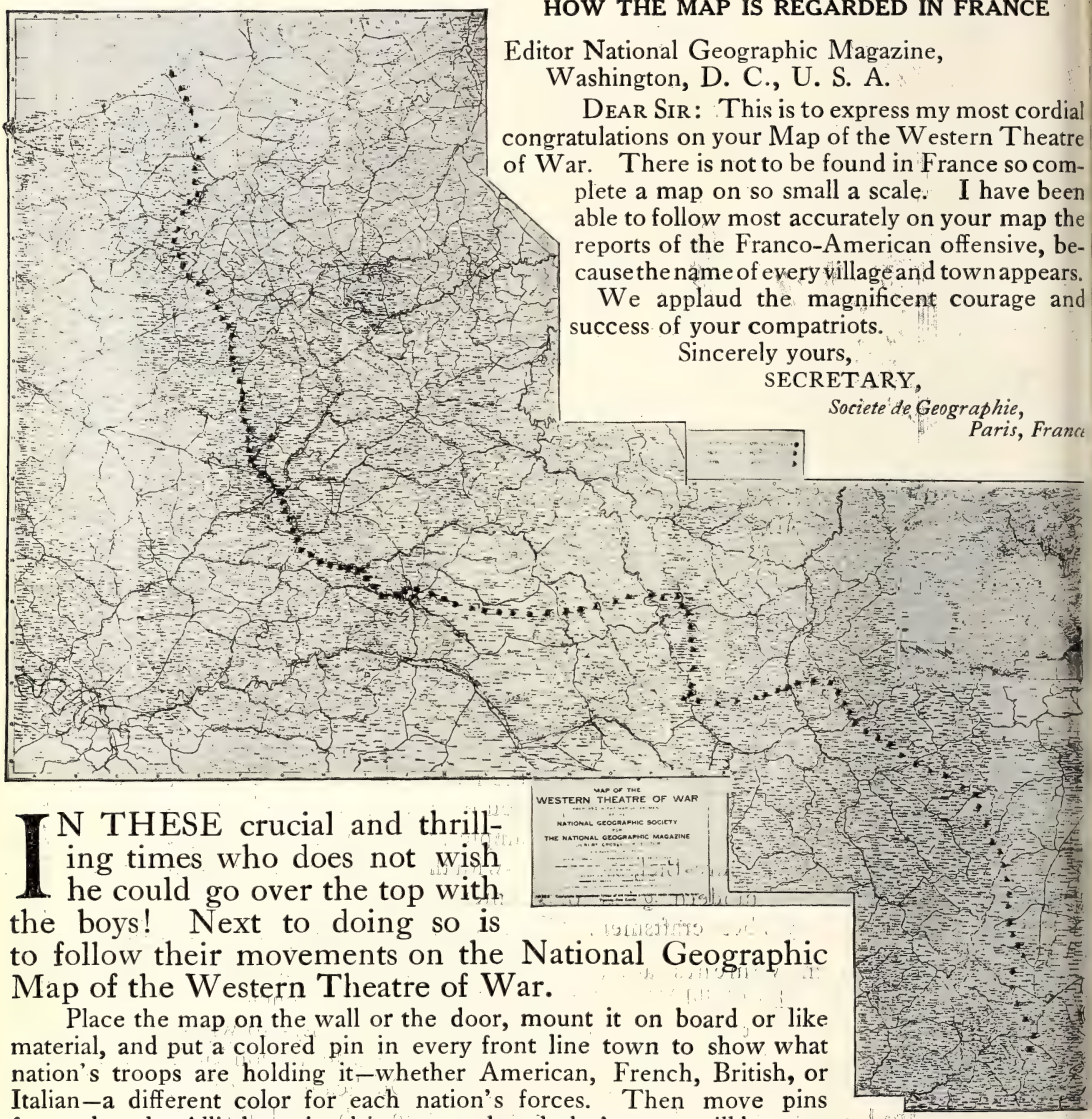
GRUEN WATCHMAKERS' GUILD, Dept. D-4, "Time Hill," Cincinnati, O.

Makers of the famous Gruen Watches since 1874. Canadian Branch, Toronto, Canada

GRUEN Verithin and Wrist WATCHES

To Follow Our Boys to the Rhine

Use the Map of the Western Theatre of War



HOW THE MAP IS REGARDED IN FRANCE

Editor National Geographic Magazine,
Washington, D. C., U. S. A.

DEAR SIR: This is to express my most cordial congratulations on your Map of the Western Theatre of War. There is not to be found in France so complete a map on so small a scale. I have been able to follow most accurately on your map the reports of the Franco-American offensive, because the name of every village and town appears.

We applaud the magnificent courage and success of your compatriots.

Sincerely yours,
SECRETARY,
Societe de Geographie,
Paris, France

IN THESE crucial and thrilling times who does not wish he could go over the top with the boys! Next to doing so is to follow their movements on the National Geographic Map of the Western Theatre of War.

Place the map on the wall or the door, mount it on board or like material, and put a colored pin in every front line town to show what nation's troops are holding it—whether American, French, British, or Italian—a different color for each nation's forces. Then move pins forward as the Allied armies drive on, and each day's news will become clear to you, and you will really feel a part of the forces that are headed inexorably toward Berlin. The 70-page index of all names on the fighting front is so arranged and keyed that you can quickly locate any and all of them.

Dept. H, National Geographic Society,
16th and M Streets, Washington, D. C.

Please send_____copies of "MAP OF WESTERN THEATRE OF WAR," with Index Book of 12,000 names, for which I enclose herewith_____dollars. Postpaid in United States.

If several copies are desired, write names and addresses and send with your card.

Printed on Military Linen, $1.50, postpaid in U. S. A.
Printed on Paper, 75 cents; Abroad, 25 cents additional.
Index without Map, 25 cents.

Name_____

Street Address_____

City and State_____

Why Teeth Lose Their Glitter

All Statements Approved by High Dental Authorities

You Leave the Film

Why do well-brushed teeth discolor and decay?

Why does tartar form?

Why does pyorrhea start?

Millions of people are asking those questions, and the answer is this:—

A slimy film constantly forms on your teeth. It clings to the teeth. It gets into crevices, hardens and stays, and your brushing doesn't remove it. And most tooth troubles are due to that film.

That film is what discolors—not your teeth. It hardens into tartar. It holds food which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea, and many internal troubles are due to them.

These facts have been known for years. But dental science found no way to effectively combat the film. A vigorous dental cleaning from time to time was needed to remove it.

Now a way has been found to combat it. That way is embodied in a dentifrice called Pepsodent. You can prove it, as thousands have, by a simple one-week test. This is to urge that you do it—at our cost.

See the Difference

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object is to dissolve the film, then to constantly prevent its accumulation.

Ordinary pepsin will not serve. It must be activated, and the usual agent is an acid harmful to the teeth.

But science has now found a harmless activating method. Five governments have already granted patents. That method, employed in Pepsodent, makes teeth-cleaning vastly more effective.

Able authorities have made clinical tests of Pepsodent. In thousands of cases they have watched its efficiency. Now we are urging all people to prove it in their homes. It means results you do not get without it, and they are all-important.

Send the coupon for a One-Week tube. Use it like any tooth paste. Note how clean your teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears.

That film is your teeth's chief enemy. One week will show you that you can combat it. Then you will always clean your teeth, we think, in this scientific way. Cut out the coupon now.

Return your empty tooth paste tubes to the nearest Red Cross Station

Pepsodent PAT. OFF. REG. U.S.

The New-Day Dentifrice

A Scientific Product—Sold by Druggists Everywhere

(136)

One-Week Tube Free

THE PEPSODENT CO.,
Dept. 204, 1104 S. Wabash Ave.
Chicago, Ill.:

Mail One-Week Tube of Pepsodent to

Name .....

Address .....

Descriptive Text by Edward W. Nelson, America's Foremost Authority on Animals

---

127 Paintings of the Mammals of North America in Full Colors by Louis Agassiz Fuertes

---

50 Reproductions of Animal Tracks Drawn by Ernest Thompson Seton

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A Series of Drawings of American Prehistoric Mammals by Charles R. Knight

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32 Black and White Pictures from Unusual Photographs of American Wild Life

INTRODUCING A LITTLE BLACK BEAR TO A LITTLE BROWN BEAR AT SEWARD, ALASKA

Wild Animals of North America

Intimate Studies of the Big and Little Citizens of the Mammal Kingdom

More than 200 illustrations: 127 Paintings reproduced in full colors; 50 Track Sketches, a number of Drawings of Prehistoric Mammals and many illustrations from unusual photographs reproduced in black and white.

THERE is no subject richer in fascinating interest than the study of animal life. To see all the types and representative species in their native environment, to watch them meeting their respective problems of life and adapting themselves to the conditions they have to face, and to follow nature through its many moods as typified by its wonderful variety of mammalian forms is a delightful and informative diversion.

To do this under the guidance of one of those born observers, whose eyes are always open, whose ears are always keen, whose brain is always quick to grasp, and whose pen is ever facile, is to become intimately acquainted with one of the richest chapters in zoölogy.

Such is to be the good fortune of those who receive a copy of the National Geographic Society's new Book of Mammals. This work is the consolidation of Edward W. Nelson's splendid nature articles in the GEOGRAPHIC.

There is no man so well fitted to introduce you to the mammals of North America as Mr. Nelson, the Chief of our remarkable U. S. Biological Survey. For forty years he has been their friend, living among them and studying their habits and traits in the most intimate way. To him an animal is something more than flesh and bone and skin and fur. It has a personality; and he is as careful to record this as to describe the formal qualities which science writes down in species descriptions.

Mr. Nelson is a naturalist of the John Burroughs order. To visit the people of woodland, mountain, and field with him is to discover a new world.

Illuminating the descriptions are natural-color illustrations from the brush of that gifted artist-naturalist, Louis Agassiz Fuertes. Mr. Fuertes is not only a master of color but also of pose, and he can catch the timid alertness of the prong-horn antelope, the cruel sagacity of the arctic wolf, the lazy indifference of the common skunk, or the wide-awake watchfulness of the gray squirrel, with equal facility.

Added to these is a series of 50 sketches by Ernest Thompson Seton, depicting the footprints of various animals as they appear in the light snow of field or forest or in the dust of the wayside. These will enable the reader to identify the tracks of many of the mammals of North America.

Together these authorities have produced a book that is without counterpart in the literature of animal life.

CUT ON THIS LINE

DEPT. H, NATIONAL GEOGRAPHIC SOCIETY, ..., 1918
16th and M Streets, Washington, D. C.

Please send.....copies of "WILD ANIMALS OF NORTH AMERICA," bound in.....
for which I enclose herewith.....dollars.

If several copies are desired, write names and addresses and send with your card.

Bound in Royal Buckram (Stiff Covers) or Military Khaki (Flexible Covers), postpaid in U. S., $3.00

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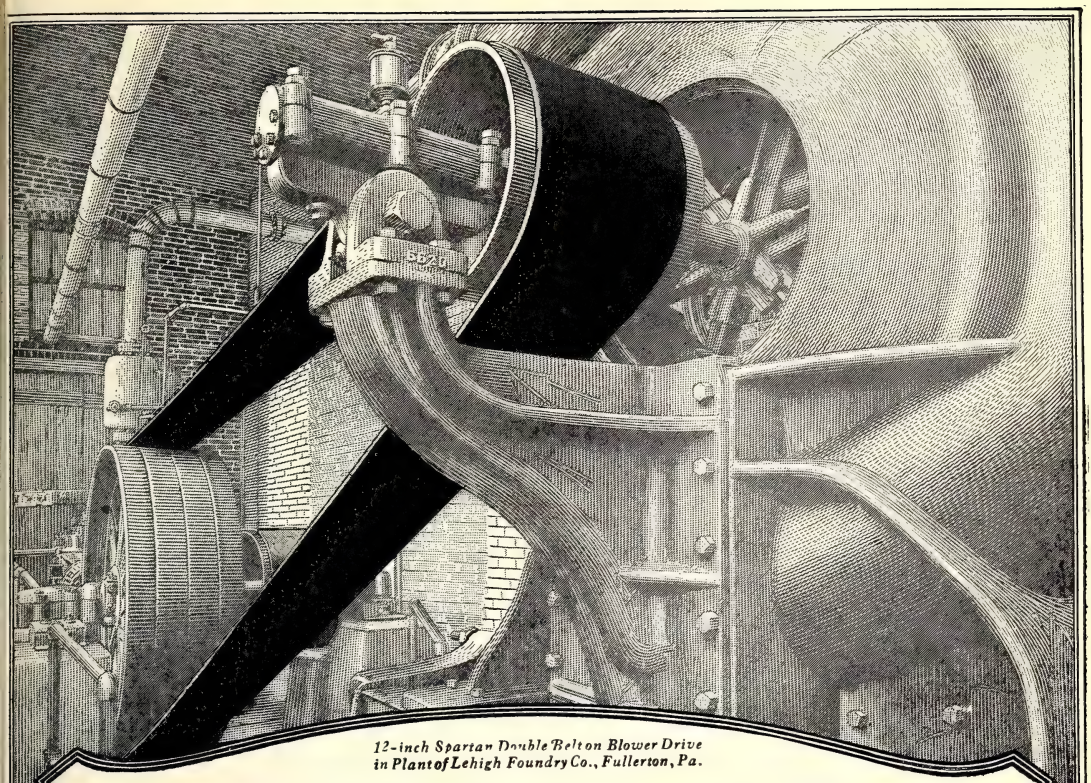

12-inch Spartan Double Belt on Blower Drive in Plant of Lehigh Foundry Co., Fullerton, Pa.

High Speed

The demand on belts varies enormously. Some must loaf along with light loads; some run slowly and some run quickly with heavy loads; and some must contend with trying conditions like steam, fumes, or exposure to heat.

For each and every set of power requirements the Graton and Knight Standardized Series leather belting presents a belt made specifically for this purpose.

Blower belts that rush along a mile a minute must have great elasticity, high surface traction and must stand up under trying conditions. For this exacting work, the Graton & Knight Spartan Belt, with its wonderful elasticity and pulley-grip, is ideal. It resists conditions of exposure, heat, steam, chemical fumes that cause most belts to disintegrate.

It is a fine example of the benefit of Standardization applied in belt making. Write for book on Standardization.

THE GRATON & KNIGHT MANUFACTURING CO., Worcester, Mass., U.S.A.

Oak Leather Tanners, Makers of Leather Belting, Lace Leather, Packings and Specialties

Branches and Distributors in all Principal Cities

GRATON AND KNIGHT

GRATON & KNIGHT

Standardized Series

LEATHER BELTING

Tanned by us for belting use

THE PRESIDENT VISITS THE FLAGSHIP: HIS FLAG FLIES AT THE BOW OF THE BARGE

Flags of the World

By Commander BYRON McCANDLESS and GILBERT GROSVENOR

A HANDSOMELY BOUND VOLUME of 150 pages, containing 1,200 flags in their full colors, 300 illustrations in black and white, the complete insignia of the uniformed forces of the United States, the international flags in use on land and sea, together with an epitomized history of each flag, and an authoritative history of the "Star Spangled Banner." In this book there are published for the first time the flags of each of the forty-eight United States in full colors and with complete descriptions based on original research and approved by the State officials.

The Federal Government put all of its resources at the command of the National Geographic Society in order to insure the correct reproduction of every military and naval flag in its proper design and coloring. The same coöperation was given by the Embassies and Legations of all the friendly countries represented. No complete collection of Pan American flags hitherto published has been correct, and the same is true of Asiatic flags.

This flag book is as authoritative as an official report, as delightful as fine fiction, and as beautifully illustrated as a gem of the printing art can be. Bound in stiff royal buckram, it is being placed in thousands of home libraries and is a gift par excellence.

Our military and naval forces find "Flags of the World" extremely useful, containing, as it does, the most complete and recent information on the important subject of flags and signals. Every soldier and sailor is glad to have one of these books, and to make them most suitable for this purpose a special edition has been printed on water-proof paper and bound in a FLEXIBLE KHAKI cover, which will stand the wear and tear of every-day use in the field or on board ship. This is a gift your boy in his country's service will appreciate.

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If several copies are desired, write names and addresses and send with your card.

Name_____

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Bound in Royal Buckram (Stiff Covers) or Military Khaki (Flexible Covers), postpaid, $2.00

City and State _____

"—and use this powder for your tender, bleeding gums"

Only dentists understand the real dangers of neglect in caring immediately and properly for spongy, tender, bleeding or receding gums—warning signals of pyorrhea.

Pyorrhea attacks and destroys the gum tissues and bony sockets which hold the teeth in place. Mastication becomes painful; the gums ache and bleed; teeth loosen and eventually fall out; the general health is affected by the bacteria developed under pyorrhetic conditions.

Pyorrhocide Powder is the preparation most widely prescribed by dentists to *prevent* pyorrhea and to aid in *restoring* affected gums to a normally healthy condition. As a part of the Dentinol and Pyorrhocide Method, Pyorrhocide Powder has demonstrated its value in maintaining gum vitality and in correcting all unhealthy conditions which lead to pyorrhea.

The Dentinol and Pyorrhocide Method originated in the Pyorrhocide Clinic, New York, ten years ago. A staff of scientific investigators and dental specialists devoted many years to studying the causes and effects of pyorrhea and how it could be prevented and treated successfully. Dentinol, to be applied by the dentist, and Pyorrhocide Powder, to be used at home, were developed.

Since 1908 dentists from all parts of the world have been instructed in the application of the method. It is being used successfully by thousands of dentists.

Pyorrhocide Powder's effectiveness is due to the presence of Dentinol in combination with other healing ingredients. Used twice daily, Pyorrhocide Powder acts quickly and surely. It relieves tenderness; heals bleeding gums. Spongy gums are made hard and firm. Their power of resistance against pyorrhea infection is increased.

Pyorrhocide Powder retards tartar formation. It cleans and polishes the teeth.

Tooth, gum and mouth health can be maintained only by co-operating with a dentist and by the regular use, twice daily, of a medium like Pyorrhocide Powder compounded to meet the requirements proved essential by years of scientific research and clinical experience.

Pyorrhocide Powder is economical because a dollar package contains six months' supply. For sale by all dental supply houses and good drug stores.

THE DENTINOL & PYORRHOCIDE COMPANY, Inc.
1478 BROADWAY, NEW YORK CITY

Sold for years exclusively upon the recommendation of the dental profession. Effective not only in the treatment of pyorrhea but also in its prevention, when used regularly as a dentifrice.

Send for Free Sample and Booklet

Upon request we will send you a sample of Pyorrhocide Powder, together with our educational booklet on the causes, effects, treatment and prevention of pyorrhea.

Shelltex Rimmed

Shur-on

EYEGLASSES AND SPECTACLES

For Outdoors, Too

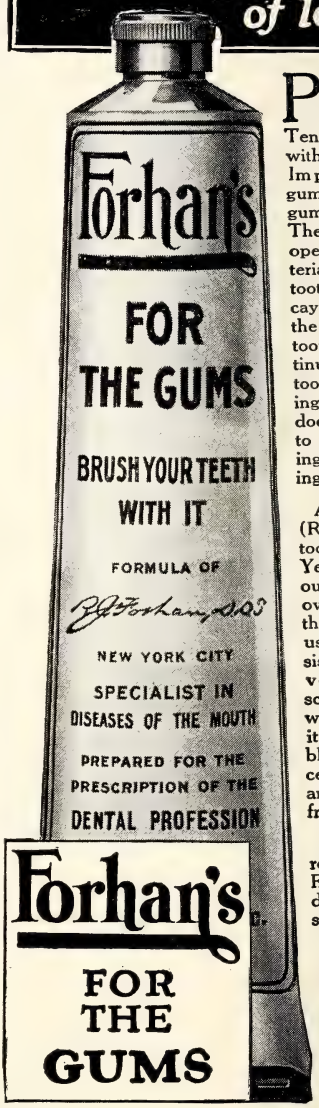
YOU can't "keep your eye on the ball" if you're conscious of your glasses. Shelltex Shur-ons stay on comfortably, and are as good-looking as they are serviceable.

It will pay you to insist on the genuine, which always bear the name Shur-on or Shelltex in the bridge. The cost no more.

E. KIRSTEIN SONS CO.
249 Andrew St., Rochester, N.Y.

Makers of rimmed and rimless Shur-on eyeglasses and spectacles. Established 1864.

Inflamed gums—a cause of loose teeth



PYORRHEA is undoubtedly a vital danger to both gums and teeth. Tender gums indicate it, and with it come loosening teeth. Imperceptibly at first, the gums recede from the normal gum line. They inflame. They present many tiny openings for millions of bacteria to attack the unenameled tooth base. Tooth-base decay quickly follows. Even if the cavity be filled and the tooth saved, the gums continue to recede. Remember, too, that inflamed and bleeding gums act as so many doorways for disease germs to enter the system—infecting joints or tonsils—or causing other ailments.

Against this Pyorrhea (Riggs' Disease) ordinary tooth pastes are powerless. Yet Pyorrhea attacks four out of five people who are over forty, and many under this age. But Forhan's—if used in time and used consistently—positively prevents Pyorrhea. It is a scientific tooth cleanser as well. Brush your teeth with it. See how promptly bleeding or gum tenderness ceases and how your teeth are kept white, clean, and free from tartar.

If gum-shrinkage has already set in, start using Forhan's and consult a dentist immediately for special treatment.

30c and 60c tubes.
All Druggists.

FORHAN CO.,
214 6th Ave., N. Y.
Send for Trial Tube Free.

W.S.S.
WAR SAVINGS STAMPS
ISSUED BY THE
UNITED STATES
GOVERNMENT

It takes **labor** and **material** to produce the articles you buy.

When you buy articles you do not need, there is that much less **labor** and **material** to produce the articles needed for our fighting forces; there is not enough for both.

By saving **food, fuel,** and all other things not required to maintain your health and efficiency, you release **labor** and **material** for the use of the Government.

If you want to win this war—**SAVE**—and lend your money to the Government by buying **War Savings Stamps.**

Every $4.22 invested in November, 1918, gives you $5.00 on January 1, 1923.

Buy more War Savings Stamps now!

W.S.S.
WAR SAVINGS STAMPS
ISSUED BY THE
UNITED STATES
GOVERNMENT

THIS SPACE CONTRIBUTED BY NATIONAL GEOGRAPHIC SOCIETY

U. S. Army or Navy
Red Cross, Y. M. C. A., and Allied Organizations

Letters of Credit are the safest and most convenient medium for carrying funds.

During the war we are issuing such Credits, ***free of commission,*** to officers and men in the U. S. Army and Navy, and to those engaged in Red Cross, Y. M. C. A., and allied organization work.

We have also sent our American representative to France for the convenience of our friends, with headquarters at the office of the Credit Commercial de France, 20 Rue Lafayette, Paris.

BROWN BROTHERS & CO.
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Founders Court, Lothbury LONDON, E. C.
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DENBY
MOTOR TRUCKS

THE tasks of war and peace alike find the same efficient performance in the Denby.

Denby Motor Truck Company
Detroit, Michigan

Envelope and Stamp Moistener

Sometimes a practical gift is worth its weight in gold. This *Stamp* and *Envelope Moistener* is useful, handy and sanitary—always ready to do what you should not do. San-i-tary Moistener in ground glass container, with enamel top, is suitable for home or office. Boxed with gift card and sent postpaid for 85 cents. One of the many practical things at small cost shown in our year book of Thrifty Gift Giving. Send for it.

Pohlson GIFTS

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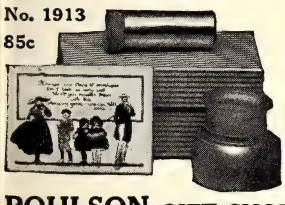

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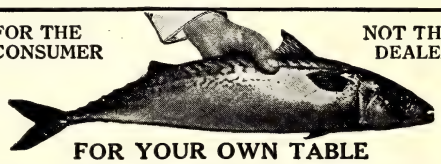
Salt Mackerel
CODFISH, FRESH LOBSTER

FOR THE CONSUMER NOT THE DEALER



FOR YOUR OWN TABLE

FAMILIES who are fond of **FISH** ought to get them **DIRECT** from **GLOUCESTER,** as no inland dealer anywhere else can possibly be in a position to offer you goods as perfect and wholesome as we can.

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We have done a mail-order fish business for thirty years, sending the goods **RIGHT TO OUR CUSTOMERS' HOMES, EXPRESS PREPAID EAST OF KANSAS,** and guaranteeing complete satisfaction or money refunded.

If you are interested in good fish, won't you drop us a postal that we may send you further information?

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A selection of our **FISH PRODUCTS** should always be in your **STORE-ROOM** for daily use and for the preparation at a moment's notice of dozens of dainty or substantial dishes.

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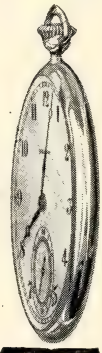
By merit only did Waltham win tributes from the nations of five continents. Horological experts select official watches without fear or favor. Calmly and scientifically they test and compare, looking through the surface of a watch into its works. It is there they find their answer.

But they discovered at Waltham their true ideal of what a perfect timepiece should be — a watch that outclassed in precision and reliability even the finest offerings of Switzerland, England or France. And with their verdict "the world's time became Waltham time."

Patent for Pendant and Bow applied for



Visit a jeweler whose name stands for the utmost in quality. That is the man you desire to patronize, because you can depend on the value of any article he recommends. Ask him to place in your hand for inspection the Waltham Colonial A, illustrated on this page.

Here is a watch as precise as it is rich in the simple beauty of its refinement — extremely thin at no sacrifice of accuracy. Maximus movement 21 jewels — Riverside movement 19 jewels — Colonial A is an example of those methods of manufacture that have brought the world to Waltham for time.

WALTHAM

THE WORLD'S WATCH OVER TIME

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VOLUME XXXIV NUMBER FOUR

THE NATIONAL GEOGRAPHIC MAGAZINE

OCTOBER, 1918

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With 16 Illustrations

An Old Jewel in the Proper Setting
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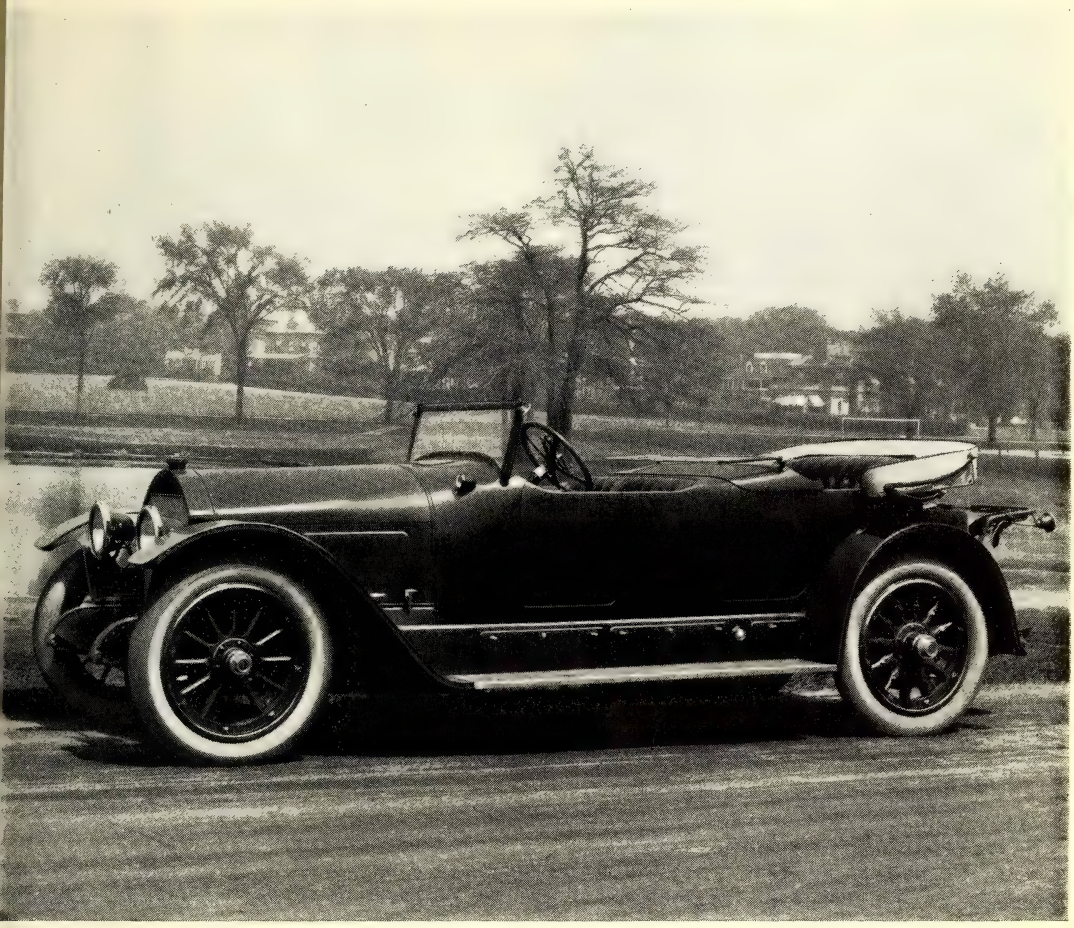

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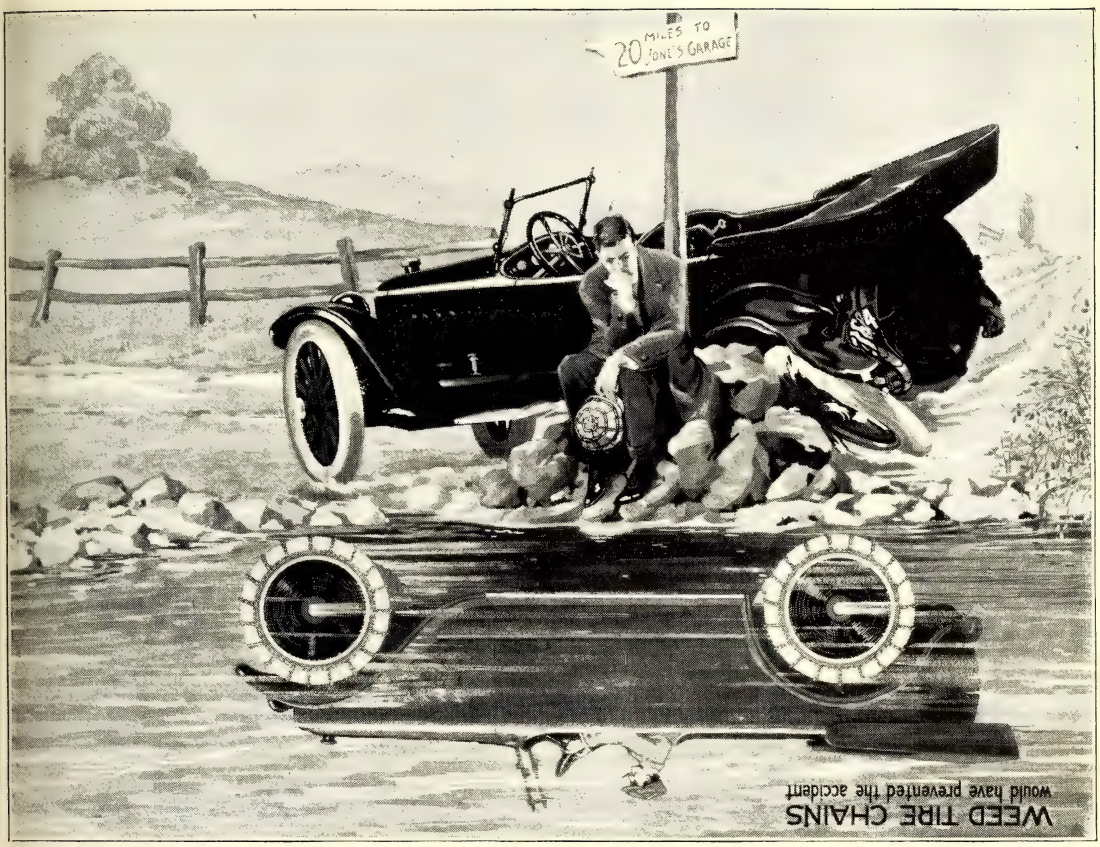

Reflections After the Skidding Accident

Reflections that show Tire Chains as the only real dependable device for the prevention of skidding, do not come to some motorists until their bare rubber tires skid and carry them upon the rocks of disaster. How strange it is that some men are never guided by the experience of others, never take the lesson home to themselves until too late.

They read the newspaper accounts of disastrous skidding accidents caused by lack of Tire Chains but they do not heed the warning. They wait until the skidding of their own bare rubber tires results in death, injury or car-damage before they realize that tires are safe on wet-slippery-skiddy roads *only* when encased in Tire Chains.

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Largest Chain Manufacturers in the World

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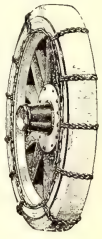

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The Greatest Mother in the World is counting her children.

She wants your name — and yours — and yours — the names of all her children.

So, stand up, you men and women of America — stand up and be counted.

Let The Greatest Mother in the World see what a big, proud family she has.

You've given your share to your Red Cross — given it generously — and you'll give your share again when the time comes.

Right now your Red Cross wants your name — not a contribution — wants to know that *you* are a member — pledged to help her.

The Greatest Mother in the World wants to know who her children are before Christmas.

Give your name and a dollar to the next Red Cross Worker who asks you for it.

Answer "Present" at the *Christmas Red Cross Roll Call*. Stand up and be counted you children of The Greatest Mother in the World.

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December 16-23

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Coal

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But the coal that is in our mines today would be valueless without the power *to get it out.* Without the power of explosives it would have been impossible to produce, during the past year, the six-hundred-million tons that have played so vital a part in supplying the needs of our armies.

The Hercules Powder Company is one of the largest producers of mining explosives in the world. From its vast plants come a large proportion of the dynamite used by the coal miners of the country; men who are bending every effort to the patriotic task of supplying our Nation with the coal it needs to carry on to victory.

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Large Roman - sermons, lectures.
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Hammond Multiplex as home equipment is NOW established. Letters to and from loved ones far away will be more frequent—contain more news—if Hammon-typed. Automatic type impression makes skilled key touch unnecessary.

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Only 11 Pounds
Full Capacity

Send *today* for interesting, illustrated catalog.

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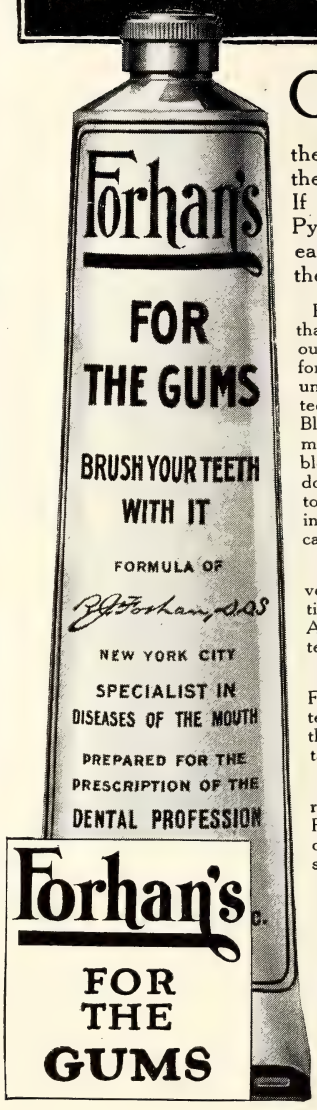
637 East 69th Street **New York City**

Tender gums—a warning



COAST defense protects the life of a nation, gum defense the life of a tooth. On the gum line danger lies. If it shrinks through Pyorrhea (Riggs' Disease), decay strikes into the heart of the tooth.

Beware of gum tenderness that warns of Pyorrhea. Four out of five people over forty have Pyorrhea—many under forty also. Loosening teeth indicate Pyorrhea. Bleeding gums, too. Remember—these inflamed, bleeding gums act as so many doorways for disease germs to enter the system—infecting the joints or tonsils—or causing other ailments.

Forhan's positively prevents Pyorrhea, if used in time and used consistently. As it hardens the gums the teeth become firmer.

Brush your teeth with Forhan's. It cleans the teeth scientifically—keeps them white and free from tartar.

If gum-shrinkage has already set in, start using Forhan's and consult a dentist immediately for special treatment.

30c and 60c tubes.
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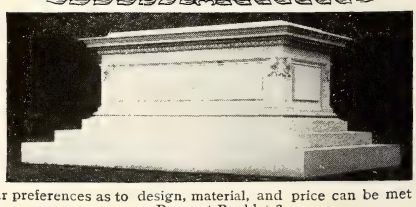

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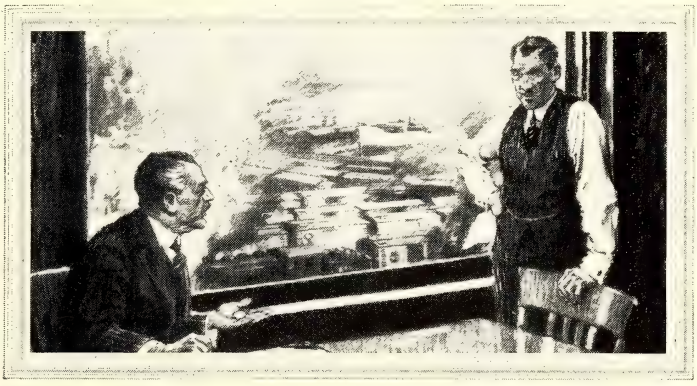

ZERO HOUR in a great munition plant! Uncle Sam's massive moguls are on track, the great ships of his Emergency Fleet are straining at their cables, ready to dash to the front with the stupendous machinery of war—on schedule time!

America's genius for organization strikes twelve in those magic words, *on schedule time.* The executive's desk is Industry's "fire control."

Uncle Sam wants every Elgin military watch the factory can possibly turn out for the boys over there—wants more Elgins for his Navy, his Railways and his Emergency Fleet. This reduces the output of civilian watches, denying Elgin the pleasure of serving thousands of waiting customers.

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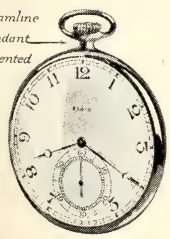
Elgin quality never wavers. Each Elgin produced is the best that modern skill can build for the purpose and the price—whether Elgin Streamline, Lord or Lady Elgin, B. W. Raymond, Father Time, Elgin Military Watch—or any other model that bears the time-honored name of Elgin.



One of the famous Streamline models

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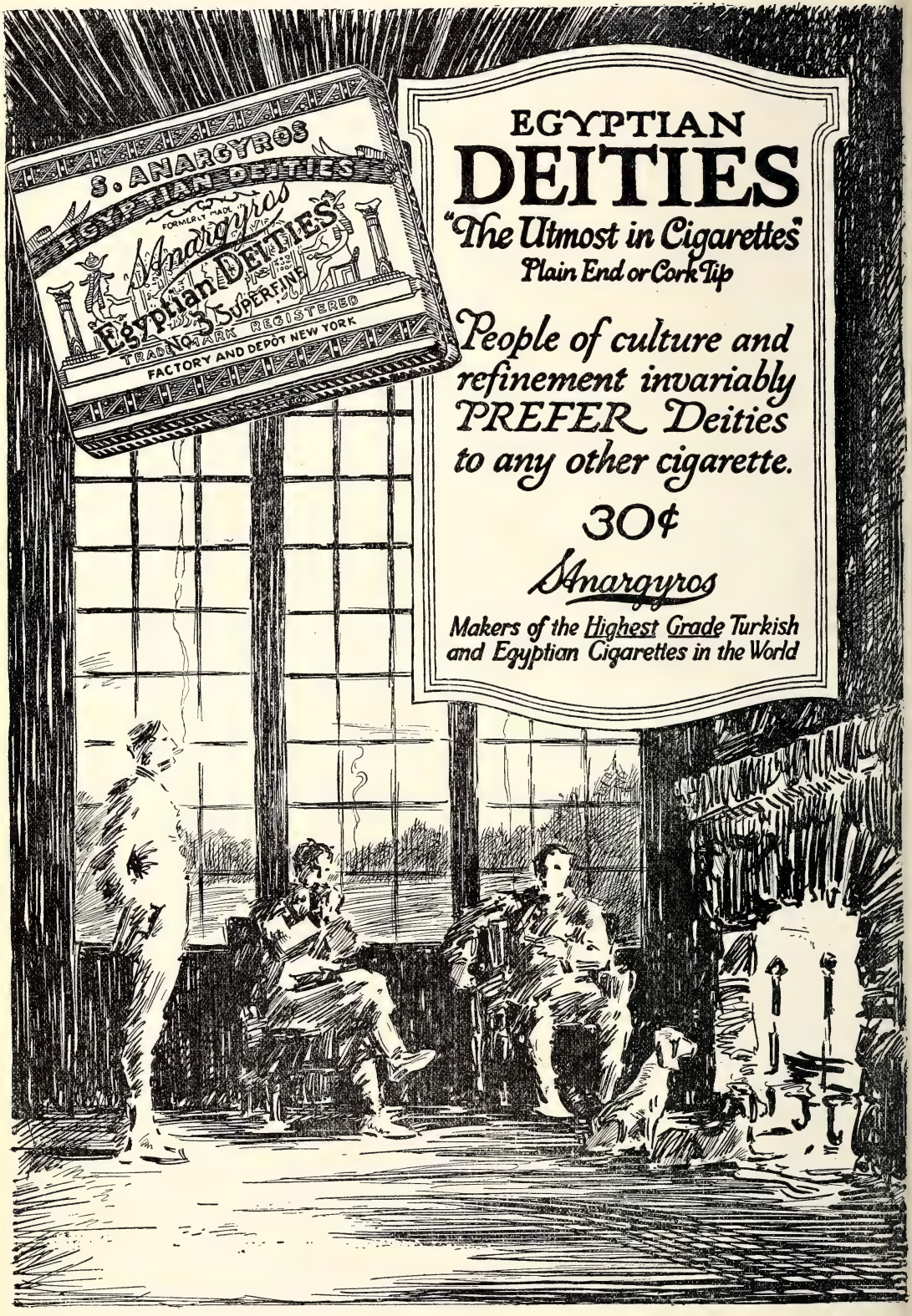
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WHEN your husband brings "Bill" home for dinner and tells him he will have to take "pot luck," it is luck indeed, if you happen to be serving a baked Swift's Premium Ham.

How genial everybody feels when the steamingly fragrant ham is brought in! Ham, oven-browned and still faintly sputtering, with spicy cloves stuck thickly in the soft, juicy fat!

In the slow, special Premium cure and in the fragrant smoke of smoldering wood fires, this fine ham becomes mellower in flavor, more delicate, more piquant.

Look for the Swift's Premium brand on the ham you buy—so that you may be sure of always getting this ham of finest flavor. Ask your dealer to show you the brand.

Swift & Company, U. S. A.

Swift's Premium Ham

A HOLIDAY REMEMBRANCE PAR EXCELLENCE

THE FIRST SALUTE TO THE STARS AND STRIPES: THE FRENCH FLEET OFFICIALLY RECOGNIZED THE FLAG OF AMERICA ON FEBRUARY 14, 1778

Flags of the World

BY COMMANDER BYRON McCANDLESS AND GILBERT GROSVENOR

A HANDSOMELY BOUND VOLUME of 150 pages, containing 1,200 flags, past and present, in their full colors, 300 illustrations in black and white, the insignia of the uniformed forces of the United States, the international flags in use on land and sea, together with an epitomized history of each flag, and an authoritative story of the evolution and history of the "Star Spangled Banner."

In all the chronicles of civilization there was never a time when so many flags waved over armed forces in the field as today. Above all, to us, our own beautiful banner has taken its place on the crest of the wave of the titanic struggle to make the world safe to live in, and it has become a necessary part of our education to know about flags.

With its wonderful illustrations; with its first publication of the flags of the forty-eight States of the United States, based on original research; with its descriptions of the uses of all the flags of all nations; with its wealth of historical data relating to the evolution of flags, this volume is the most exhaustive, and yet the most entertaining, work of its kind in existence.

The Federal Government put all of its resources at the command of the National Geographic Society in order to insure the correct reproduction of every military flag, past and present, in its proper design and coloring. The same coöperation was given by the Embassies and Legations of all the friendly countries represented. No complete collection of Pan American flags hitherto published has been correct, and the same is true of Asiatic flags. No other publication has shown all our State flags or embodied all the changes that have been made in them during the past decade.

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Years of research and clinical tests demonstrated that the one most effective medium for home use in the treatment and prevention of pyorrhea is Pyorrhocide Powder. As a result of the Clinic's discoveries and method which have been given to the entire dental profession, Pyorrhocide Powder today is prescribed by thousands of leading dentists for *preventing,* as well as for *correcting* an unhealthy condition of the gums.

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If you have any symptoms of pyorrhea, do not delay the use of Pyorrhocide Powder.

Pyorrhocide Powder is quick and certain in its action. We would like to send you, without charge, a sample of Pyorrhocide Powder to try. Use it. Note how cool and soothed your gums feel—and how long that feeling lasts. This sample will give you an idea of what the *regular* use of Pyorrhocide Powder will accomplish.

Pyorrhocide Powder is economical because a dollar package contains six months' supply. For sale by all dental supply houses and good drug stores.

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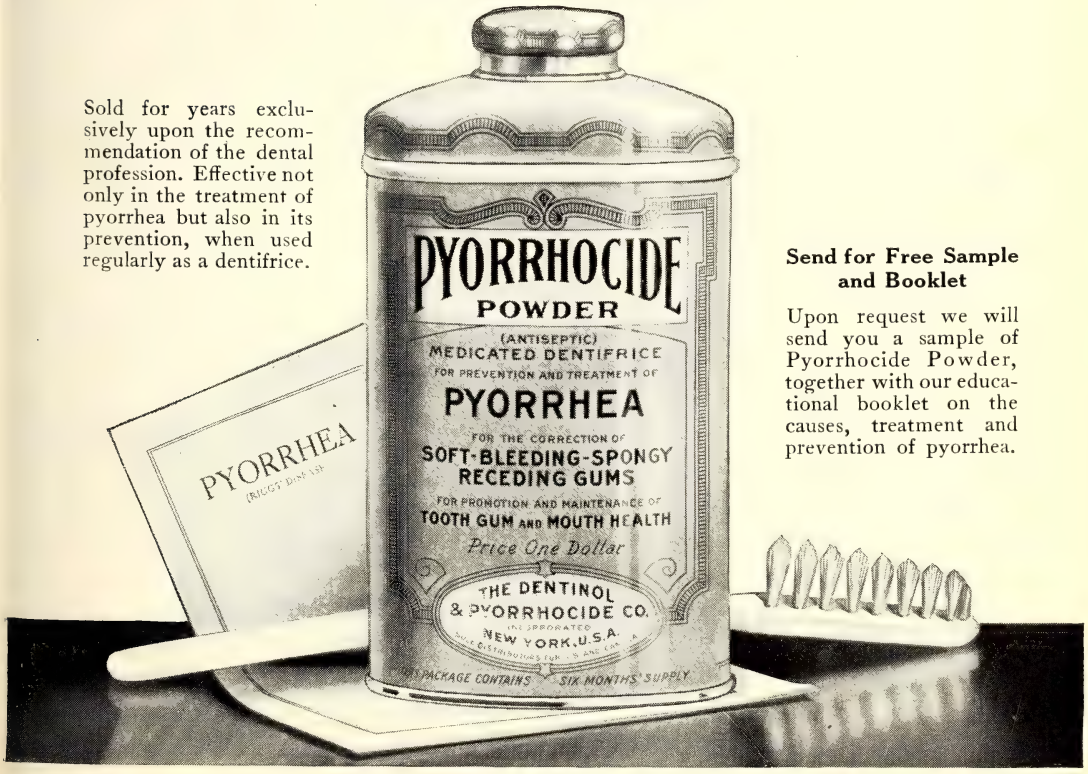

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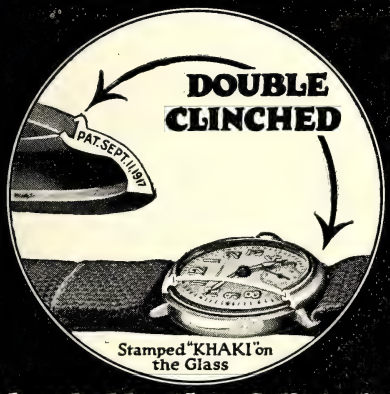

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VOL. XXXIV, NO. 4 WASHINGTON OCTOBER, 1918

THE NATIONAL GEOGRAPHIC MAGAZINE

RUSSIA'S ORPHAN RACES

Picturesque Peoples Who Cluster on the Southeastern Borderland of the Vast Slav Dominions

BY MAYNARD OWEN WILLIAMS

AMONG conflicting details, coming principally from the two great Russian cities where food is scarce and humans and troubles are plenty, one fact sticks out like a church in a Russian landscape: The great empire of "one hundred and eighty million" which we have learned to mention so glibly is no more.

The old régime collected peoples like curios—the more curious, the better—and labeled them in Russian; but it never developed in these diverse and conquered peoples a spirit of nationalism. Pan-Slavism it could not inculcate, for a large part of its border subjects were of Ural-Altaic or Turanian stock.

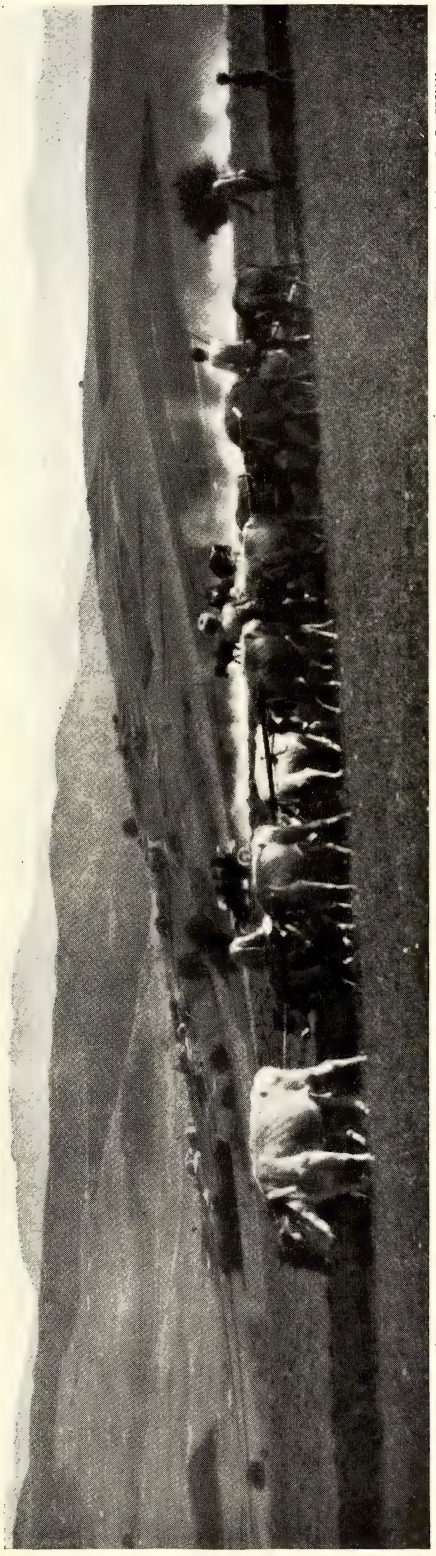
Russia under the Tsar was unified only by force—a triumph of centralized autocracy over the "it doesn't matter, so never mind" spirit of subjects who in the mass were too indifferent and too lacking in group consciousness to resent oppression. The mass must ever be emancipated by the intellectuals, and by putting calloused hands above calloused brains and indomitable wills, Bolshevism is proving more reactionary than Tsardom in intimidating the individual without creating a State.

Tsardom counted no cost too great and no sacrifice too heroic, if the dreaded steam-roller moved on or the glacier of Slavic domination crept slowly toward the Dardanelles, the Pamirs, or Manchuria. A two-mile bridge spanning the distant Amur or a daring military road through the heart of the Caucasus; a trans-Siberian railway or an imposing ecclesiastical building in Jerusalem—these were energetically supported by Tsardom and carried out with Russian funds, while Russians in the national capital were kept in unlettered ignorance and restricted to an economic condition little better than serfdom.

The many races which once formed the Russian Empire include the intrepid Georgians and the politically sluggish Sarts; the Cossacks, to whom battle is more than food; and the great mass of *mujiks,* supine in the midst of governmental chaos and wrongs perpetrated by a foreign signatory to a treaty of peace.

RUSSIAN VENEER OVER A TURKISH CITY

In December last, I visited Bayazid, the first Turkish city to be taken by the Russian army on the Caucasian front. The population was unmistakably Turkish. The red fez was a common spot of color in a dusty old city that tries to hide from the radiant gaze of Mount Ararat amid tawny hills, and the inhabitants prayed from a kneeling position instead of standing with bowed head or crossing themselves (for map, see page 277).



Photograph by M. O. Williams

AN ANCIENT PLOW AT DUSHET, ON THE GEORGIAN MILITARY ROAD, DRAWN BY TWELVE OXEN, WITH THREE DRIVERS AND A PLOWMAN TO DIRECT THE PLOW: NOTE THE AUTOMOBILE IN THE BACKGROUND

A few Russian women could be seen wearing Paris styles a little out of date or with their heads swathed in the shawl of the peasant matron, and from one of the buildings there fluttered the Red Cross of the "Union of Cities" hospital, but the city was as Turkish as it had ever been.

The signs on the street corners, strikingly new in their blue and white, were printed in Russian. Those Russian letters in such a city were as exotic as in the Russian Concession on the Yangtse at Hankow. The veneer of Tsardom had been laid on over the Turkish city without changing its character a particle. Yet a Russian could find his way to the Russian post-office by reading signs in the Russian language.

RETREATING FROM THE TURKISH FRONT

That very day Russian *soldats,* freed from the yoke of autocracy by Tsar and bureaucracy and blindly assuming the attractive but heavier yoke of autocracy by the mob, were retreating in droves from the Turkish front, so eager to abandon all dreams of conquest or defense of territory in which they had no interest for one more visit with the home folks that many rode on the roof of the military train through the bitter cold of winter, 6,000 feet above the sea.

The veneer of Russian greatness, an outside show which had caused even Germany to fear, has peeled off. A boisterous wave of popular unrest and revolution, suddenly aware of Tsardom's weakness, but still lacking Tsardom's strength, has swept from the barren steppes south of the Caucasus to the dreary wastes of Lapland, and from the Crimea to Manchuria.

If once that great sluggish mass is roused to united action by the honeyed words of German propagandists, not only will the patchwork republic of Lenine and Trotzky be disrupted, but Anglo-Saxon ascendancy in Asia may give way to Teutonic hegemony—a Pan-Turanian* empire dominated by the militarism of Germany and led by the Timur and Attila of modern war.

* The Pan-Turanian movement aspired to an aggressive union of Asiatic peoples, especially the Ural-Altaic tribes. This menace to Indo-European civilization received the active secret support of German autocracy.

Photograph by M. O. Williams

A GEORGIAN BOY IS ONE OF THREE DRIVERS DIRECTING 12 OXEN DRAWING A PLOW

The same boy may be seen in the illustration on the preceding page. He rides on the yoke of one of his team.

But the present outlook promises a better sequel. The Armenians, who more than any other people have suffered from the Osmanli branch of the Turanian race, are still holding out in the Erivan plain and the hill city of Shusha.

The British, whose empire might suffer most from Pan-Turanian success, have trekked 700 hard miles from Bagdad and landed a party at Baku, the Pan-Turanian hub. Here lives Ahmed Aghaeff, Baku Tatar and chief exponent of Pan-Turanianism, principal in the Pan-Turanian conference in Constantinople four years ago, and editor of the widely spread *Turk Yurdu*, whose aim is to awaken among a score of widely separated peoples a sense of their common tie. What the landing and presence of even a small number of British at Baku means, only one who understands the racial complexity and opportunist psychology of Transcaucasia can realize (see also page 275).

BOHEMIANS IN THE VOLGA VALLEY

The brave Bohemians, the most-discussed people of this year, who centuries ago helped repulse the Tatar hordes from the gates of Vienna, now hold the heart of the Volga Valley, with the capital of

Photograph by M. O. Williams

ON THE GEORGIAN MILITARY ROAD: THE DESCENT FROM THE KRESTOVI PASS TOWARD KOBI, ON THE TEREK

This great highway, one of the most beautiful mountain roads in the world, is more than 130 miles in length, running from Tiflis through Krestovi Pass (7,800 feet above sealevel) to Vladikavkaz

the Kazan Tatars and Bulgari, the ruined city where fifteen centuries ago the Bulgarians had their seat.

Of all the varied peoples who inhabit that rabbit warren of humanity, the Caucasus, the Georgians are most interesting. With the Armenians, they form an important outpost against Turanian dangers. The great mountains that sheltered Shamyl and many another patriot have shut off the various tribes and races in secluded valleys, where they have retained their peculiar customs. Thus the mountains of Daghestan have kept that recluse among nations "an island in a sea of history."

But Georgia has been more or less fortunate, for the same pass that is now used by the wonderful Georgian Military Road, with its matchless views, has been the pathway for innumerable historic movements, and the valley which is now followed by the railway from Batum to Baku has been the caravan route of countless traders.

WHERE GEORGIA WAS BORN

A few miles south of the snow ridge of the Caucasus, there is a wretched little village whose fame should be world-wide. Mtzkhet has claims to antiquity that make New England towns appear as embryos, for its citizens assert that it was founded by one of Noah's sons, who strolled over from Mount Ararat one day after the waters had subsided and chose this site because of its excellent drainage.

Beneath its terraced homes two rivers unite: the clear, cold Aragwa, hastening from its birthplace in the eternal snows of the Caucasus to the hot depression of the Caspian, and the Kura, sullied and dirty, swinging in from the west to make its way down the Tiflis depression and across the barren Transcaucasian steppe, between the mountains of Daghestan and the highlands of Armenia.

Damascus has a verdant freshness about it that is as deceptive as grease paint, but Mtzkhet stands out from green fields and pastures new like a weathered, sharp-bowed fishing smack in an emerald sea.

On a rock cliff opposite this quiet city with the cat-fight name the kings of Georgia erected their first castle, but it was in Mtzkhet itself that Georgia was born. The Georgians admit their descent from the Accadians and Sumerians, but there is nothing in their appearance or personality to indicate their descent from anything. They seem to have ascended from the plane of other men.

Militant of appearance, handsome of countenance, chivalrous, and unfamiliar with hard toil, these lovers of wine, women, and song are as princely in bearing as the unwashed Bedouin before his desert tent. Part of them are mountaineers—the most picturesque brigands that ever carried an arsenal at their belts. The rest are agricultural people, whose contact with the soil does not prevent them from holding their chests up like soldiers in uniform.

The Georgian women conquered the Turkish rulers by the palace route, but the Georgian men are handsomer than their wives, and in Georgia the male wears the fine plumage. But he treats his wife and daughters well and never allows them to act as servants.

There is so much strength in the Georgian face that the women lose their greatest charm by the time they mature. The classic nose is too noble to be pretty, the straight, large mouth shows determination rather than a Cupid's bow, and the fine eyes soon dominate a face that is manly in its beauty. In the Tiflis Red Cross cafés one may see scores of Georgian women with short, curled hair who could pose as Belvedere Apollos, but never a Venus.

St. Nina established a Christian church in Mtzkhet about 347 A. D., which was for many years a center for Christian culture. The Georgians assert that they were Christians before the Armenians, and vice versa; yet the princely but spendthrift Georgians and the oppressed but wealthy Armenians have been so much mixed throughout their history that there are today persons who call themselves Georgians and who speak Georgian, but who attend the Armenian church, while Armenians speaking Armenian are often found in Georgian churches.

The Georgians are good hosts and the Armenians are shrewd business men. That is why the Golovinski Prospekt in

Photograph by M. O. Williams

GERGETI, THE CENTER FOR A GROUP OF MUCH INCLINED FIELDS FROM WHICH THESE MOUNTAINEER GEORGIANS EKE OUT A FREE LIFE

"Of all the varied peoples who inhabit that rabbit warren of humanity, the Caucasus, the Georgians are most interesting. With the Armenians,

Tiflis, one of the proudest avenues in the world, is owned by Armenians and brightened by the presence of the Georgians, the handsomest young people one can find in Asia.

GEORGIA'S DECLARATION OF INDEPENDENCE

On October 14, 1917, I attended the investiture of the Georgian Katholikos at Mtzkhet, the first in one hundred years. This was the first step this militant people, who had chafed under the burden of Tsardom, made toward independence. The affair at Mtzkhet marked their religious autonomy and freedom from the Russian Church. On May 26, 1918, after the Turks took the Batum and Kars districts, thus leaving only historic Georgia to the Transcaucasian Republic, the Georgian Diet declared their independence, thus virtually ending the Transcaucasian Republic, in which Tatars had had four representatives to Georgia's three.

Whether Georgia can hold out against the Turks and Germans remains to be seen, but of one thing we may be sure, Georgia will never tamely submit to oppression. She flirted with Germany's Pan-Turanian schemes and as late as June 19, 1918, was forced to send delegates to Constantinople to confer with the Central Powers; but Georgia has never relished the idea of subservience and she may hold out till relief can reach her.

Every train entering Mtzkhet on October 14, 1917, was packed to the doors. Crowds of young men from Tiflis rode on the roofs in order to see the colorful drama of the rebirth of a proud nation. It was not until the procession between the tiny station and the stately church was formed that order appeared in the kaleidoscopic scene.

A PICTURESQUE PROCESSION

At the head of the line was a handsome Georgian, bearing aloft a blue silk banner inscribed in silver with Georgian characters and surmounted by a silver disc which bore the picture of some great saint. He was dressed in soft black boots, a dark-brown *tcherkeska,* with its narrow waist and flowing skirts and cartridge cases across the breast, and wore the small Georgian skull cap; but as necessary as his dress were the sword and dagger and, strange anachronism, an automatic pistol in a brand-new russet case at his hip. Death-dealing weapons are still articles of ordinary dress in Georgia.

The color-bearer was flanked by two swordsmen in wine-colored plush doublets edged in soft fur, scarlet trousers, soft white-leather boots with gold tassels, and anklets of soft white leather with narrow stripes of red leather trimming.

Behind them came thirty or more male singers, gaily dressed and followed by a band of young women wearing Marguerite braids which reached below the knees. Over their close-fitting bodices of figured silk in soft tints of gray and blue they wore flowing velvet cloaks of delicate blue edged in fur. Their skirts, of queenly length, were paneled in the same soft tinted material as composed their bodices and their soft boots were hidden except for the shapely toes.

Then came a huge motor-car, crawling along with all the dignity due its chief occupant, the Katholikos-to-be. Forming a daisy chain about this ecclesiastical chariot were forty or more young Georgian girls, their smooth cheeks flushed beyond their usual fine color by the excitement. Most were dressed in simple white, against which their raven hair and rosy cheeks showed lively contrast, but a few wore tailored suits and small hats in the latest European style.

OBSERVERS OF THREE HOLY DAYS EACH WEEK

Behind these lovely ladies came gaunt Khevsurs, wearing chain coats of mail and chain helmets. Their straight swords were double-edged and each carried a small shield decorated with appliqué figures. Their small, wiry horses sniffed restively at the fumes of the motor-cars, resenting more than did their ruddy-haired masters this anachronism of eight centuries gap.

The Khevsurs wear the cross on their clothing and are the champion religionists of the world, for they observe the Christian Sabbath, the Jewish Saturday, and the Mohammedan Friday, and their religion is a strange mixture of all three beliefs with paganism. An early French traveler started the story that they were

A GROUP OF THE FAMOUS GEORGIAN WOMEN

The woman in the center has her hands full of a peculiar candy made by stringing walnut meats and covering them with a gelatinous substance formed by boiling down grape juice

Photographs by M. O. Williams

SOME GEORGIAN BOYS ALONG THE GEORGIAN MILITARY ROAD NEAR KASBEK

Part of the Georgians are picturesque brigands; the rest are agricultural people who have lost none of their pride of race as a result of their contact with the soil

descendants of some Frankish Crusaders who fell in love with Georgian womanhood and forgot the Holy Grail in the midst of Georgian loveliness; but a matter-of-fact and very erudite Georgian scholar in Tiflis spoiled that story.

Inside the church, erected on the spot where the unseamed vesture of the Christ was found, after having been brought hither from Golgotha by a Jew, there lie buried many of the proud but ill-fated line of Georgian kings, the last of whom, George XIII, ceded his territory to Russia in 1801 and died that year, broken-hearted, a true ruler, who could not conquer and therefore faced the only alternative—death.

Sixteen centuries have passed since the first Christian church was erected on that site; yet in the necropolis beyond there are remains of broad-headed men of the Iron Age, compared with whom Heraclius, Queen Tamara, the Guramides, and the Pharnavasians are unromantic moderns. They could tell of times before Prometheus was bound to the heights of Kasbek and Jason came hither in search of the Golden Fleece. Mtzkhet is ancient, but it is only a way station on the great highway of history across the mountain barrier which bridges the land-masses of Europe and Asia.

Photograph by M. O. Williams

A GEORGIAN MOUNTAIN GIRL OF GERGETI ON THE SLOPES OF KASBEK

There is so much strength in the Georgian face that the women lose their greatest charm by the time they mature. The classic nose is too noble to be pretty; the straight, large mouth shows determination rather than a Cupid's bow.

Georgia's relations with Russia should have a peculiar interest for Americans, for the King of Kakhetia sought the protection of Ivan III the year Columbus discovered America, and our Pilgrim Fathers were about to embark for the rock-bound coast when Georgia, harried by Persia, appealed to Michael, the first of the Romanoffs, for protection. While our first Federalists were drafting our Constitution, Heraclius II declared himself a vassal to Russia. Last October, Georgia planned to be one of a group of autonomous States that would be the nucleus for a federated Russia.

WOMAN SUFFRAGE IN THE CAUCASUS

"I divorce you three times!" The silk-clothed Tatar with his well-trimmed

Photograph by M. O. Williams

TWO TEKKÉ TURKOMANS ON THE STEPS OF THE MILITARY MUSEUM AT GEOK TEPÉ

The Russians insult the Turkomans with pictures of the Russian victory and Tekke cowardice, but there is about as much cowardice in a Turkoman as there is milk in a milk-snake. One of these fighting men wears the Georgian Cross (see page 259).

beard evidently meant it, and the veiled figure opposite him should have quailed before the idea of widowhood. But she didn't. That was one of the incidents I saw in connection with the election of the Transcaucasian Government in Tiflis on the day that ill-starred little republic was born. One of the wives of a prominent Tatar had voted a different ticket from the one her husband had advised, and, womanlike, once the ballot was safely and secretly deposited, told her husband about it. Such are some of the primer steps toward modernism in Georgia.

High over the city circled an aëroplane, with its clatter drawing the attention of the people. The day was clear and bright and the streets crowded. Thousands gazed aloft to watch the movements of the machine. It crossed the Kura, which divides the shoestring city along its banks, passed over the Golovinski Prospekt, and turned toward its hangar to the east.

Then suddenly there fell from the plane a dazzling shower of huge snowflakes, which grew and grew, volplaning and whirling until a few reached the outstretched hands of the people below. The Bolshevik occupants were bombing the election crowds with Bolshevik literature. Electioneering in Tiflis was not without its picturesque side.

In the theaters on the night before, the lights had scarcely flashed on after the first act when from a dozen places in the top gallery showers of flyers were dropped onto the heads and laps of the gaily dressed throng. Through the day automobiles, with their exhausts roaring and decorated with the numbers of the different political parties, dashed through the fine streets, campaigning for votes.

Posters were pasted to almost every-

Photograph by M. O. Williams

TEKKE TURKOMANS AND RUSSIANS ON THE TRANS-CASPIAN RAILWAY

"The Tekke Turkomans are huge, fine-looking men, who wear sheepskin hats a foot high. They owe as much of their charm to their fantastic headgear as does a stage beauty."

thing within reach, and in some cases the poster of one party had been covered by the poster of another. Plate-glass windows on finer shops than most American cities boast had been daubed with paste and plastered with posters, and few indeed were the shop-keepers who cared to scrub off these disfiguring sheets before the election was finished. Crude numbers indicating the various parties were scrawled here and there, reminding me very much of college days when the Freshies painted "1911" on every available spot and the Sophs changed the last figure to a zero to show that the class of 1910 was still on the map.

SIXTEEN POLITICAL PARTIES IN CITY CONTEST

The election in Tiflis was hardest on street-cleaners and most profitable to printers, for every party seemed determined to surpass every other party in the number of flyers they could scatter on the streets and in all public places. For months to come the buyer of small notions in Tiflis will carry home his goods in a slip of paper naming political candidates. One of the sixteen parties in a city where 100,000 votes were cast printed 2,000,000 flyers.

Some of the parties published booklets explaining their position, and party platforms fell on the people from all sides. When a people to whom the ballot is new undertakes to choose from among sixteen parties, it takes a judicial mind. But most of the people seemed to have decided in advance what ticket they would vote, for I found no one who could give me the names of all the parties represented by the sixteen numbers.

Number 1, the Minshevik branch of the Social Democratic party, polled nearly a third of the votes cast. The Armenian Federalist party came second with two-thirds as many. They were followed closely by the Bolsheviki, most of whose

Photograph by M. O. Williams

A TEKKÈ TURKOMAN AT GEOK TEPÈ, THE SCENE OF SKOBELEFF'S VICTORY OVER THE TURKOMANS

votes were cast by Russian soldiers still stationed in Tiflis. They were the ones who utilized the aëroplane as an electioneering factor months before it was proposed to distribute propaganda in this manner behind the German lines.

After the Bolsheviks came the Party of Popular Freedom, and next came the Cadets. The Zionist party polled 781 votes and a party called the Moslem Union of Russia, represented by number 14, did not get a single vote. Number 13 ran a close second for consolation honors with a solitary ballot.

Men and women voted together, rode in the same electioneering automobiles, distributed flyers together, and in general showed an absolute equality of opportunity and willingness to make use of it. The voting was heavy, amounting to one vote for every five inhabitants of Tiflis.

In spite of the heavy vote, there was little excitement during the three days of election. There was talk of intimidation by the soldiers, but I could detect no evidence of it. Soldiers were prominent in the air-warming oratory in front of the voting places, but those I saw seemed content to listen to their own eloquence without using more forceful measures.

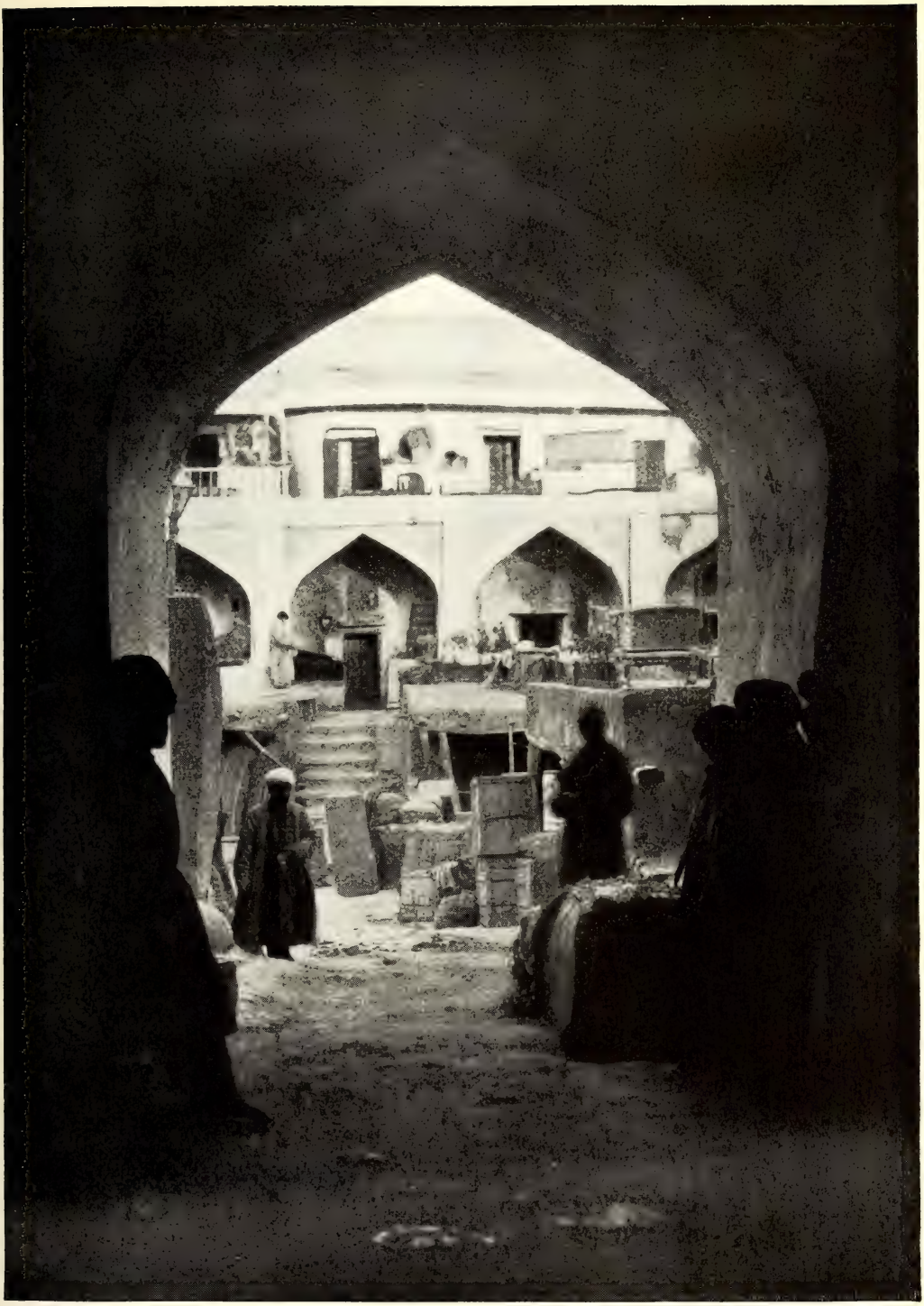
Out of eighteen thousand Bolshevik votes, the Russian soldiers cast twelve thousand. Prisoners were allowed to vote, and 246 out of 250 voted the Bolshevik ticket.

THE SIZE AND EXTENT OF TURKESTAN

Our doorway to Turkestan was Krasnovodsk, a mediocre city consisting of a railway station, two churches, several wharves, and other small things too numerous to mention, but not too insignificant to make their presence felt. It has spread itself out at the base of some tawny hills very much like the African hills along the Red Sea and basks in the desert sun with a supreme disregard for its own slovenliness. Not only is the railway station the main architectural feature of the town; its sentimental value is only equaled by that of the several wharves. Some say that history emigrated from Turkestan. If it ever emigrated from Krasnovodsk, it simply obeyed the common impulse.

Turkestan begins in the west by being a land of desert, dust, and dreariness and ends in the east in lovely and fertile Ferghana. Its inhabitants insist that in spring there are green spots here and there, but in few places is there enough rain to give an annual house-cleaning to the dusty trees and shrubs.

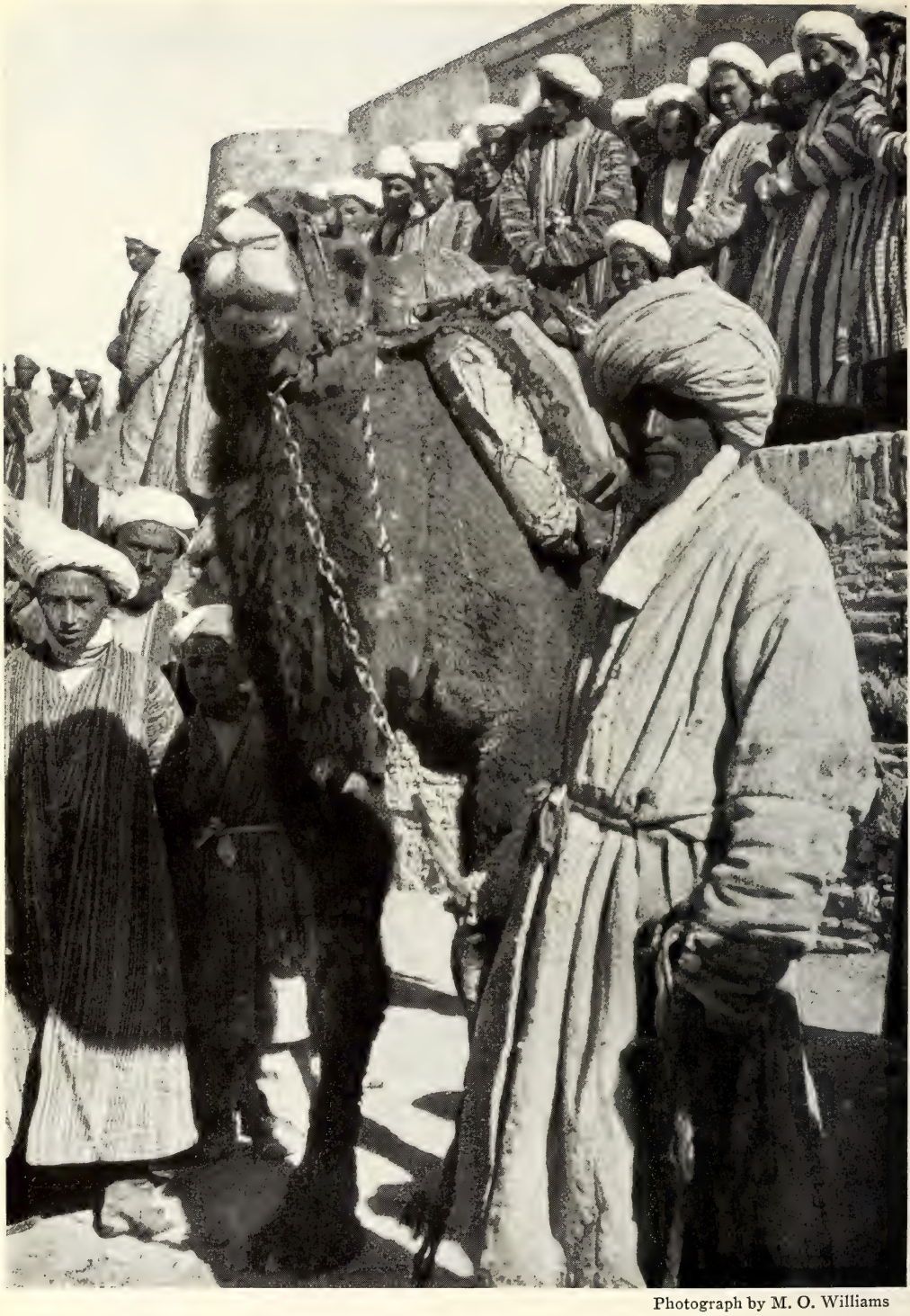
Turkestan, including the Khanate of Khiva and the Emirate of Bokhara, both of which now claim independence, is three times as large as Texas, yet it was almost lost in the Tsar's domains. It has as many people as New York and Massachusetts combined and there are as few Russians as there are native-born Americans on Manhattan Isle. Its two largest rivers empty into a sea about the size of



Photograph by M. O. Williams

A BOKHARA KHAN LOOKING IN FROM THE DARK PASSAGE THAT LEADS TO THE COVERED BAZAAR: GREAT WEALTH IS SOMETIMES CONTAINED HERE

Like many another ancient city, Bokhara does not owe its permanence to brick or marble. A good rain would wash away its crumbling walls and mud houses. It is being continually patched and rebuilt, never completely old and never wholly new.



Photograph by M. O. Williams

A SON OF THE DESERT VISITS BOKHARA

"When the nomad comes to town he's sure to be done brown; the dealers cheat, the Mullahs pray, and the poor guy's broke ere he gets away to the desert"

Vermont, New Hampshire, and Massachusetts, and do their best to keep it from drying up into a salt pile; but they are slowly losing the battle.

The first point of interest along the railway is the Akhal Oasis, which can easily be distinguished in spring, but resembles the desert in late fall and winter. It is the largest oasis in Turkestan, 160 miles long and 10 miles wide. Here dwell the Tekke Turkomans—huge, fine-looking men, who wear sheepskin hats a foot high. The Turkomans owe as much of their charm to their fantastic headgear as does a stage beauty. When they remove them and reveal the shaved heads and gaudy embroidered skull caps beneath, they seem commonplace; yet there are many of the older men whose majesty of bearing is not a matter of costume alone. Their red cotton khalats give them a princely stateliness which the trousered and booted Russian with his shirt flopping lacks.

AMERICA'S LOVE FOR RUGS CHANGES AN ORIENTAL PEOPLE

If some one asserted that the American love for Oriental rugs had changed the marriage customs of a nomadic people, had brought forth on this globe a comparatively homely race of human beings, and had built up a complex system of morals in the heart of Asia, it would seem like a sensational story.

Yet that statement seems well founded, and love for beauty in America has reacted on the facial features of a princely race in Turkestan with deplorable result. Truly it is a small world when an artistic recluse in a New York studio fathers a homely son in a distant desert. Yet the rising generation of Turkomans are distinctly homelier than their princely sires. And the conquest of their domain by Russia does not entirely explain it.

The Tekkintzi rug, more commonly known by the less distinctive name of Bokhara, is the loveliest product of the desert loom. Its charm lies not in intricacy of design, manifold detail, or symbolic meaning. It is not a picture in wool. Brilliancy of coloring it does not have. But in richness of tone the Tekkintzi wins its rightful place as queen of rugs.

Its symphony of soft and sober color has its major and minor chords. From one direction it is dark and quiet and soft. But as the light strikes down into its velvety nap, it shines with a light overtone and reveals a sheen like that of silk, such as can come only from years of contact with the flexible, high-arched feet of the desert mother or the heel-less boots of her master.

Years of care in selecting the long-fibered, spotless wool, in dyeing it in reds from Bokhara, blues from Afghanistan, or blacks from Merv, with a touch of orange or yellow now and then, and in weaving it beneath the hot sun of the dry desert, give the Tekkintzi a character which more hurried methods cannot give. It reveals no trace of foreign accent, for its language of lasting beauty is bred in the blood.

When one sees how well the erect Turkoman, with his stalking camel or his loping horse, fits the desert vastness he wonders why the Russians were able to humble him as they did. God gave him life and boundless pastures for his flocks, and while he sat in solemn council or rode the boundless plain, with a wobble-kneed colt at the heels of his light-foot mare, his wife wove rugs and found in them expression for the artistic in her nature and its desire to make itself known.

Then came the Russian glacier, creeping down toward India, and the fearless nomad was cruelly beaten in his own field by the well-armed fighters of an agricultural race. The locomotive came to shriek derision at his train of stalking camels, and a band of shining steel cut its burning way across his trackless desert.

Then the trade in rugs, which had begun as a matter of art and individual choice, became a commercial transaction. As the pastures became smaller, irrigated plots made it possible for the nomad to become agriculturalist, and the dweller of the *yurteh* began to buy with the product of his wife's labor the frames for his felt hut, instead of making them himself from the reeds of the marshes. The old roaming life was gone and mud huts, plain and square, began to grow up from the desert plain, usually centering about a homely station building. Not flocks but rugs became the source of income.

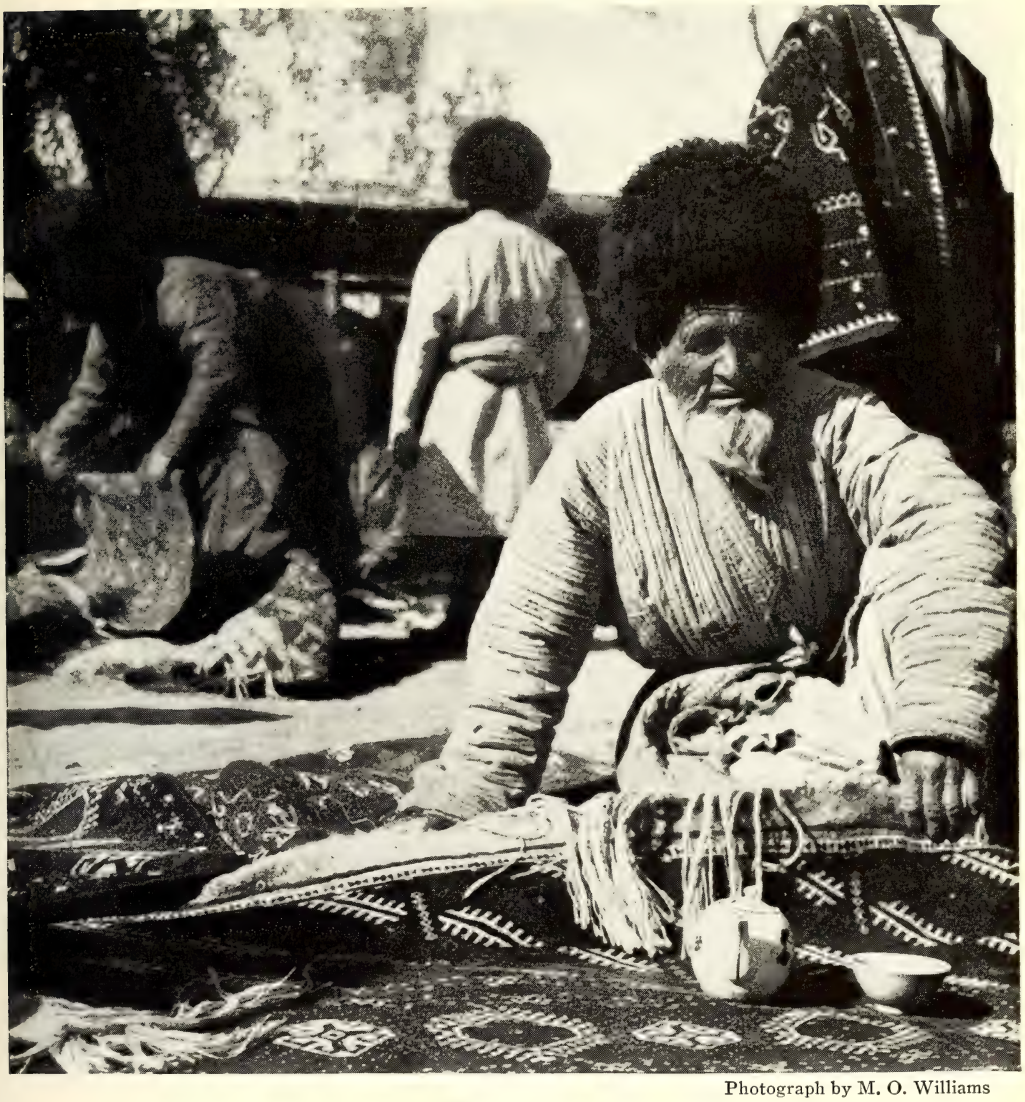
Photograph by M. O. Williams

IN THE BAZAAR AT MERV

The legend and history of Merv date back many, many centuries before the Zoroastrian Books of Wisdom told of the haven that prehistoric man sought and found in the great oasis which bears the name of the present town.

For centuries, possibly extending back to the Iranian peoples whom Alexander found here on his way to India, the Tekke maiden had been taught to dye and weave. When she was married to her Mohammedan husband, the young bride took with her to her master's hut the rugs her patient toil had formed, and he in turn paid a corresponding price to her parents. Her dowry was her skill and its product. She was a menial, but with the soul of an artist. Her toil was long, but it was not drudgery. She was not a slave, for her work demanded the inspiration of a soul, and she had an enviable position compared with that of many of her Oriental sisters in polygamy.

Gradually these masterpieces in mahogany, deep chocolate, terra-cotta, old rose, burnt orange and black found their way to America, where their appeal was irresistible. Buyers raced one another across Europe into the Transcaspian home of history to secure the priceless



Photograph by M. O. Williams

YEARS OF CARE ARE REPRESENTED IN EACH OF BOKHARA'S RUGS

Around the Merv Bazaar are small sheds to which the wholesale buyers remove their wares and store them or display them to those who were not lucky enough to see them first

treasures of a conquered race. The skill of the Tekke woman began to win its reward. Her genius had caused the art world to wear a path to her hut and her open-air loom. But there was the unhappy side.

THE TURKOMAN TAKES AN INFERIOR WIFE

Only the rich young Turkomans could afford to buy a wife at the exorbitant price her skill made possible. Parents raised the price of their daughters, consoling themselves with the fact that if they could not produce offspring they could at least produce valuable rugs. The age of marriage became higher. Caught in the trap which skillful women had woven, the young men revolted from the exaggerated demands of the avaricious and unromantic parents and sought cheaper wives elsewhere, while Tekke women, robbed of love and enmeshed in their own skeins of fine wool, dragged out busy lives of hated spinsterhood.

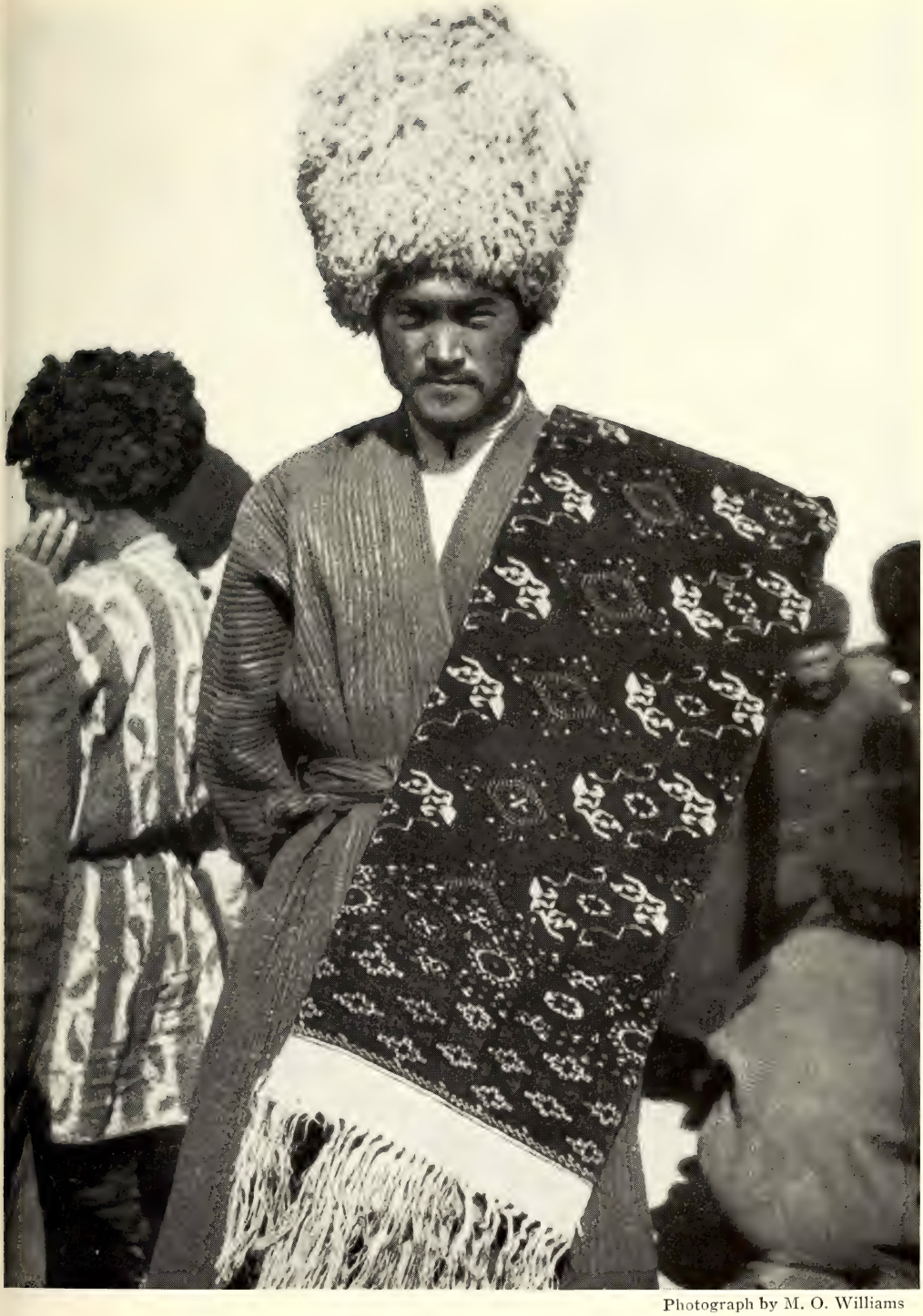
Photograph by M. O. Williams

STRIKING A BARGAIN AT MERV

The buyer and seller grasp hands to feel out the opponent, and when they seem to be in deadlock a third man steps in to arbitrate. If it is a go, they shake hands once more with the money between the palms.

The Turkoman was a fine, erect man, whose real height was accentuated by a massive, shaggy sheepskin shako till he seemed a veritable giant. To the princely bearing of the Bedouin he added the militant charm of the drum-major. His fine features were cruel but handsome. His nose was straight, his chin strong, and his face oval. He was handsome and he knew it. With American methods he could have won the hand of any wife he chose. But he was forced by custom to follow the method of barter and his purse was as thin as his lips.

Among the Persians, Kirghizes, and Sarts this militant Romeo bought wives for a tenth what a Turkoman woman would cost. But he had to pay the price in the irregular features and smaller bodies of his offspring. Commerce robbed him of his proper mate and put in her place an inferior woman who bore homeliness instead of beauty. Rugs fought with humans and defeated them. But the



Photograph by M. O. Williams

A JEWEL OF THE HAND LOOM

When a small dealer in Merv wants to sell a rug he drops it over his shoulder thus and acts unconcerned; that gives the impression that the rug has merits that need no salesmanship.

Photograph by M. O. Williams

THEOLOGICAL STUDENTS ARRAYED IN THEIR RAINBOW FINERY SEATED BEFORE THE MIR ARAB: BOKHARA

Six colors in a single Bokhara male costume is considered a monochrome. Bokhara is a mud flower-pot containing every conceivable color of

demand for rugs, like the demand for wives, brought its own unhappy sequel.

THE RUG-WEAVING ART FINALLY COMMERCIALIZED

The supply of fine old rugs was insufficient and new ones had to be made more quickly. Women who had not learned the complex processes of manufacture began to produce rugs for the brisk market. Persian, Sartian, and Kirghize women began to set up frames and turn out a product that showed their lack of artistic taste. Aniline dyes became common, and coal-tar yielded colors so hideous that artificial aging methods had to be resorted to. The market in a depreciated product began to decline.

The young men not only could not afford a Turkoman wife; even the Sart and Kirghize women became a burden rather than a source of income. The Turkoman, whose religion is lax and whose ideas of social intercourse are the same, became the first nominal Mohammedan to forsake polygamy for indiscriminate prostitution; and in Bairam Ali today there exist great buildings devoted to this shame produced by the commercialization of art.

Nineteen seventeen was a bad year in Turkestan. The Russian Government had encouraged the growing of cotton for its Moscow factories instead of food, and with the disorganization of the railways by Bolshevik troubles and the long drought, both in the Afghan Mountains and in Turkestan, food became scarce and dear. Hunger forced priceless rugs into the market, and when I visited the rug market at Merv there were thousands of specimens, where the autumn before there had been dozens.

Many of them are the best quality that has been seen for a decade. When the well-to-do American secures one of these art treasures from the cradle of civilization, he has a product whose value increases with every year, unless he mars with heeled shoes an art study in wool which was not intended for such use.

But it is a small world nowadays, and back of many a rug that will find its way to America after the war is a desert woman robbed of her mate by the skill of her hands and the avarice of her parents; a homely little son of a handsome father and a bought woman from another race; and a great brick brothel in Old Merv, rising beside the ruins of ancient cities that reach back to the time of the Persians, the Uzbegs, the Mongols, the Arabs, the Nestorians, and the Seleucidæ, and beyond into the remote ages before the Zoroastrian Books of Wisdom told of the haven that prehistoric man sought mid the shifting desert sands and found in the great oasis of Merv.

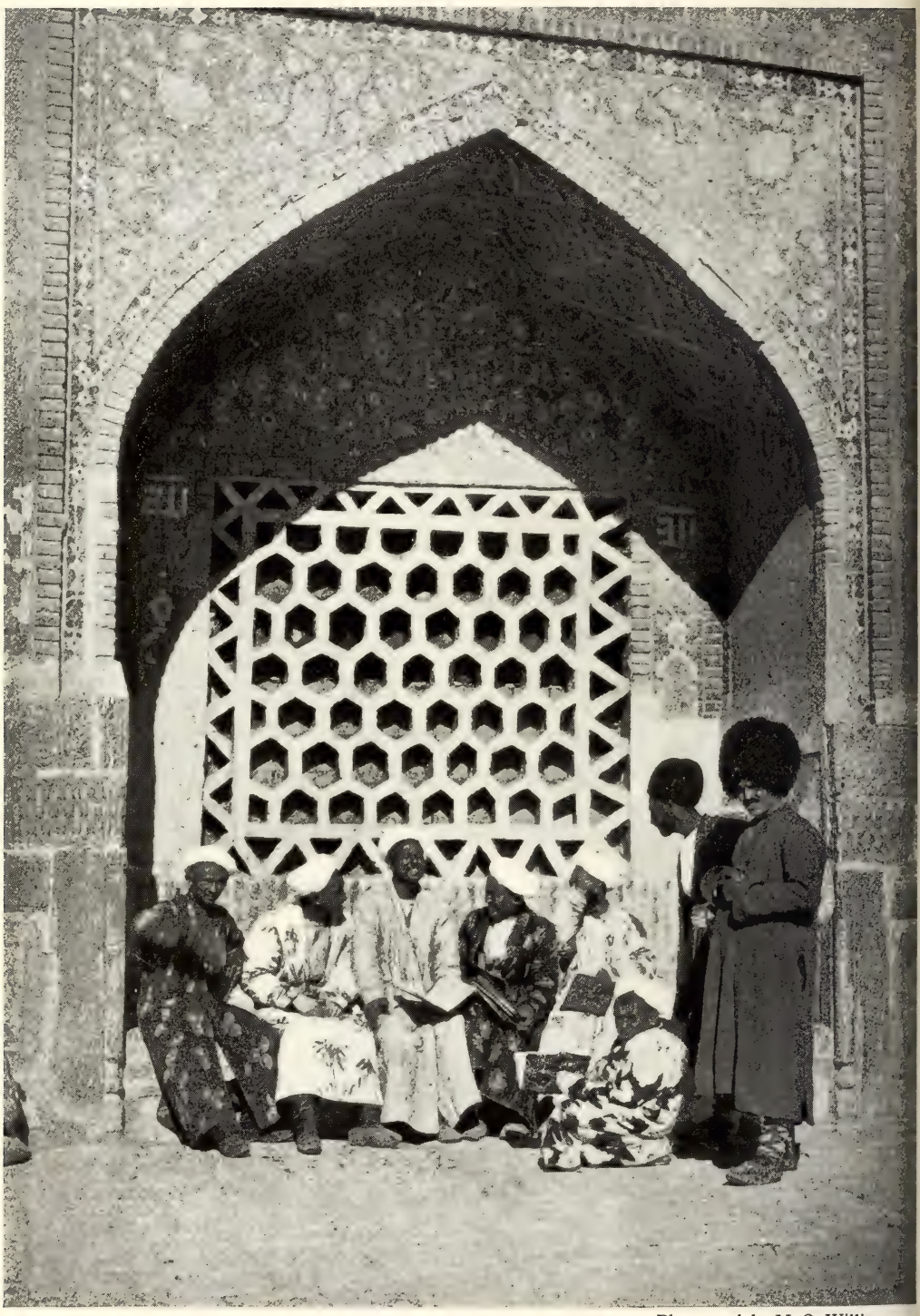
THE CHARM OF BOKHARA

Farther east lies the romantic mud flower-pot of Bokhara, which might be any desert city inclosed in crumbling walls and composed of mud houses which have almost no windows on the streets. A good rain would wash it away, and if left to the ravages of time this ancient city would soon sink to the level of the dust from which it was constructed. But Bokhara, like many another ancient city, does not owe its permanence to brick, marble, or reinforced concrete, and it will probably survive for a few more centuries, patching up here and rebuilding there, never completely old and never wholly new.

There are some charming spots in Bokhara, but it is a city lacking in architectural interest. There is a very romantic tower from whose top, 200 feet above the courtyard of the mosque of which it is the minaret, criminals used to be hurled headlong to their death. This high minaret, which has all the grace and charm of a monolithic smokestack, is almost the only break in the skyline. But the people of Bokhara are absorbingly interesting and their principal charm is their dress.

A solemn old Bokhara mullah wears as his flowing robe a garment whose colors would have made Joseph in his famous polychrome coat appear to be practicing camouflage in a dust bin. An American darky chooses just such colors for his necktie and then hides it under his vest to keep the city from calling out the fire department.

Six colors in a single Bokhara male costume is considered a monochrome, and the rainbow is a colorless aggregation of dull tints compared with what is considered sober apparel for a Bokhara Tatar.



Photograph by M. O. Williams

BOKHARA THEOLOGUES

And two Turkomans who had to find some excuse for getting into the picture. No, only one is a Turkoman; the one with the close-clipped cap is an Uzbeg.

Photograph by M. O. Williams

THREE BOKHARA THEOLOGUES IN FRONT OF MIR ARAB

In Bokhara on Friday spotless white turbans are the rule, but a riot of rainbow tints is to be found in the costumes beneath that white headgear

In Merv a crowd looks like a great mass of shaggy, black chrysanthemums, on account of the sheepskin caps worn by the Turkomans. But in Bokhara on Friday spotless white turbans are the rule; and under those turbans purples, blues, scarlets, yellows, pinks, and greens of myriad hues. There are blazing yellow suns on dark-red backgrounds and barber-pole stripes in a dozen colors.

There is just one color effect that the Bokhara man has not yet learned. He does not accordion pleat his gown and make it of alternate strips of crimson and white silk, so that it ripples from white to red and back again with every step. The man who introduces that effect to the Board of Deacons of the Common Council of Bokhara Religions will surely win fame and fortune.

Bokhara is a mud flower-pot containing every conceivable color of flower and

Photograph by M. O. Williams

THEOLOGICAL STUDENTS IN BOKHARA, SHOWING THE FINE CARVED DOOR, THE MAIN ITEM OF ARCHÆOLOGICAL AND ARTISTIC INTEREST

every one is a male. A Bokhara woman has no place in the color scheme, unless it be as a neutral background. She hides behind a horsehair veil four feet by two and wears a cloak of gray that conceals any fascination she may have. The prettier ones wear thinner veils than the grandmothers. Oriental veils will continue to be considered a means of punishment, but as far as the man on the outside is concerned, they are, more often than not, a kindness.

WHERE "EVERY FRIDAY IS EASTER SUNDAY"

The Friday service in the Registan in front of the Emir's castle is most impressive. From the entrance of the ark the cobbled square slopes down to the melon stalls and fruit venders' shops at the lower end, from whose shelter even a foreigner can observe the ceremony.

Stretching down the incline from the wide doorway is a line of white-bearded Moslems dressed in their heaviest silks and broad silver belts, standing on such glossy, faded rugs as never reach a dealer's hands. Fifty or sixty feet lower down there is a cross-line of other worshipers. There in the bright sun of the market-place, forming a color picture that only an Eastern sun could harmonize, hundreds of men bow and kneel and rise in unison. The timing of their movements is perfect. One sees broad silk-clad backs and massive white turbans at one instant and white beards and erect forms the next. Larger groups of worshipers may be seen in Samarkand and Delhi; but nowhere will one see a finer grouping of color. Every Friday is Easter Sunday to the Bokhara Moslems, and the kindly sun of the desert softens and harmonizes the varied scene into a pleasing whole.

THE BAZAARS OF BOKHARA

Not only are there varieties of color, but of race as well. Persians, Jews, Hindoos, and Armenians mingle with the Sarts, Uzbeks, Tajiks, and Afghans. Tatars and Turkomans can be seen side by side with the Mongolian Kirghizes, and even Chinese wander through the maze of covered bazaars or swing across the brilliantly lighted squares. If Bokhara resembles a crocus or pansy bed in color effects, it resembles an anthropological museum in types of nose, mouth, cheek-bone, and eyes. But on all sides one sees the broad face, high cheek-bones, and round head of the Turanian.

The bazaars of Bokhara are her main charm. Even Damascus has nothing finer. The streets are covered and the lights subdued. Each tiny shop, a Mother Hubbard cupboard in everything but emptiness, where the shrewd merchant sits with his entire stock within reach, has a rug at its tiny front porch, where the customer can sit and smoke or drink tea until the bargain is complete.

One can see processes as well as products and hours may be spent in watching the fascinating handicrafts of the East. The brass-ware is inferior to that of Damascus, but adds a mellow glow to the long, dark bazaars, and gaily-colored saddles and gaudy velvet caps, edged with glossy fur, light up the scene.

Bokhara is a very important religious center, with 364 mosques. Why not one more, with a temporary tabernacle for leap years, it is hard to say. But the Moslem year is shorter than ours, so that perhaps they have enough mosques for one mud city. There are more than a hundred theological colleges, with small rooms for the students surrounding a paved quadrangle from the corners of which rise small domes surmounted by stork nests.

THE BOKHARA MOSLEMS

The Bokhara Moslems are ceremonialists to the tips of their fingers. They have shifty eyes, intellectual faces, and indolent bodies. Many of them are fat and greasy. One will see more fat men among the worshipers at Bokhara than he will in weeks of travel in Georgia or among the Turkomans. The Moslem religion fits a sleek beard and a fat body, and it is no wonder that the Turkomans are considered very poor churchmen.

But if one would really know the charm of Bokhara and its Oriental spell, he must not alone thread the murky bazaars, where the copper-workers' fires cast fantastic shadows on the tiny shop-faces opposite, or sit at the busy braziers eating

Photograph by M. O. Williams

A PERSIAN COBBLER IN ASKABAD, WHICH IS ONE OF THE CITIES FROM WHICH THE RUSSIANS HOPED TO ENTER PERSIA VIA MESHED

spitted mutton with a loaf of unleavened bread as table and fork, or satisfy the thirst of the desert with rosy pomegranates, luscious apples, or aromatic musk-melons from Chardjui, with almond and raisins to eke out his Oriental meal.

Let him seat himself beside one of the picturesque, but stagnant, pools, whence Bokhara derives its water, while the shades of evening silently settle about the quiet city. The Emir has tried to protect this Oriental spell by forbidding a hotel within the gates, and the last of the Russian business men have commuted back to their homes in Kagan. But the gates will not be shut for some time yet, so take time now in this most Oriental of cities to feel a little of the philosophy that takes pride in the past and thinks not of the morrow.

TWILIGHT IN BOKHARA

Three veiled women come down to the water's edge, their shrouded forms reflected in sombre tints from the afterglow which leaves its rosy blush in the fringe of sky behind us. Now from behind one heavy veil there emerges a snow-white arm which dots with a touch of light the watery mirror of the quiet pool. In and out flits that firm, slender arm with its heavy gold bracelet until she turns to her companions and they all climb the slippery steps and fade away into the shadows of the roofed bazaar.

Following her comes the water-bearer with his flabby water skin, which he slowly fills through the neck from a leathern bucket until it becomes bloated and full-bodied as some huge amphibian. Some of the water splashes back into the dark pool in a silvery stream edged in pearls. And the music of its falling merges with the musical street cry of the passing peddler of sweets, who is trying to dispose of the rest of his tiny stock before night settles down.

Here at last is the East. Not Damascus, with its tourist hotels and shiny victorias; not Jerusalem, its ancient wall rent by the Kaiser's gate and its glaring clock-tower; not Cairo, with street-cars clanging by and evil-minded touts dogging one's footsteps; not even Constantinople or Delhi or the lovely, but lifeless, dream in marble at Agra, can quite match the charm of old-world Bokhara, dusty and tumbledown, with its seared face toward the glorious past, when Merv was queen of the East and Bokhara was her rival.

Then, as night really falls, we hasten through the deserted bazaars, barred and covered on both sides, where infrequent and dim electric lights can't quite spoil the fanciful effect, past great khans, in whose courtyards solemn, thoughtful camels ponder over problems of their own with supreme lack of concern for the rough stones that bruise knees once accustomed to soft sand beneath the stars. Here one old patriarch roars like a lion while his turbaned master beats him to his wrinkled, calloused knees.

And as we emerge from the dilapidated old walls of this dusty mud flower-pot a muezzin up near the scraggly stork's nest that tops the minaret sweetly intones the call to prayer. Beside us in the dusty road a string of tawny camels, grotesque in their ugliness, but picturesque hulks against the leaden sky, plod silently by on padded feet which sink deep into the soft dust of the Oriental desert.

THE TOUCH OF TIME'S LOVING FINGERS

What costume does for Bokhara, architecture did for Samarkand. The Registan, once the show-place of Central Asia, still retains much of its former beauty, for the tinted tiles which encase the imposing façades of the mosque schools of Shir-Dar, Tillah Kari, and Ulug Beg have retained as much of their Oriental brilliance as is pleasing to the Western eye. Time has touched the tiles of Samarkand with loving fingers, leaving all that was beautiful and nothing that was garish.

And the crowds which flock the great market-place today add interest and animation to a historic and dignified plaza. The costume, the facial make-up, the method of transportation and bargaining, all are much what they were when Timur had his capital here, although the medressehs, which form three sides of the Registan, are of a much later date, erected while our colonists were settling Jamestown.

Outside the native city, with its sellers of melons and menders of shoes, its hun-

Photograph by M. O. Williams

RELIGIOUS FAKIRS IN THE REGISTAN AT BOKHARA

Posters announcing the latest "movie" are plastered on the mud wall to the left

dreds of praying men and its tasseled boxes made from gourds of fantastic shape for use with pea-green tobacco powder, one sees tilework at its best, dating from Timur's prime. Here are found the beautiful mausolea of Shakh Zinda, erected by the monarch whose empire reached from Siberia to the Dardanelles and from the Ganges to the Persian Gulf.

A JACK-OF-ALL-TRADES ARMY

That Timur the Lame, whom Marlowe pictures as a crude barbarian, was not without culture as well as kultur is shown by the fact that these mausolea were erected to the nurse, the sisters, and the spiritual adviser of the great nomadic chief who captured Delhi and Tiflis, Damascus and Aleppo, cities now coveted by Hadji Wilhelm of Potsdam.

In the shadow of the huge Mosque of Bibi Khanum, which Timur erected to his favorite wife, the great grain and dried fruit market is now held, for the fertile valley of the Zerafshan produces heavy grain, luscious grapes, and thin-shelled almonds, as well as the juicy melons which one buys, after sampling, in great drippy slices, in the Registan.

Timur's army was a Jack-of-all-Trades horde, for each fighter not only carried a bow with thirty arrows, a quiver, and a buckler, but for every two mounted fighting men a spare horse, and every ten had a great tent of felt. Each squad of ten also had two spades, a pickaxe, a sickle, a saw, an ax, an awl, a hundred needles, eight and a half pounds of stout cord, an ox's hide, and a strong pan. Swiss Family Robinson was not better provided for from the mother's wrist bag.

With this equipment and such flocks as were necessary, the great roving warrior advanced against a score of enemies and conquered most of them, so that he was reputed to have had his chariots drawn by conquered kings, wearing as parts of their harness the jewels which once they wore as crown gems.

Then came the day when the conqueror returned by way of Derbent and northern Persia, over the route Germany seeks as the corridor to the East, and the long, long trail winding across barren steppes and hot desert, over snow mountains and through the torrid heat of the Ganges and the Caspian depression, led Timur, the lame wanderer, back to his tomb in Samarkand. He never reached his capital alive; but his faithful followers, before they began fighting among themselves, carried the warrior's aged body back to the city where his friends lay buried.

The tomb of Timur, with its melon dome of turquoise blue, is in a quiet section of the city, at some distance from the smaller but lovelier mausolea of his loved ones. But in that cool and dark tomb, below the hot sun of Turkestan, the great Mongol leader and lame traveler lies buried with eight friends. Barbarian though he was, Timur loved deeply, and in death he is not alone.

ROMANCE GIVES WAY TO COMMERCE

Historical romance gives way to commerce when one leaves the polychrome-tiled mosques of Samarkand and slips across into the lovely valleys of fertile Ferghana, where Russia's cotton was grown before revolution spoiled the Moscow factories and the railways at the same time, so that mountains of cotton piled up in the yards at Kokand and Andijan. Last winter the people hungered, for the railway that took out cotton used to bring back food; but this year the food is growing once more in the cotton fields, and Turkestan will be better off when this winter's famine comes to parts of Russia.

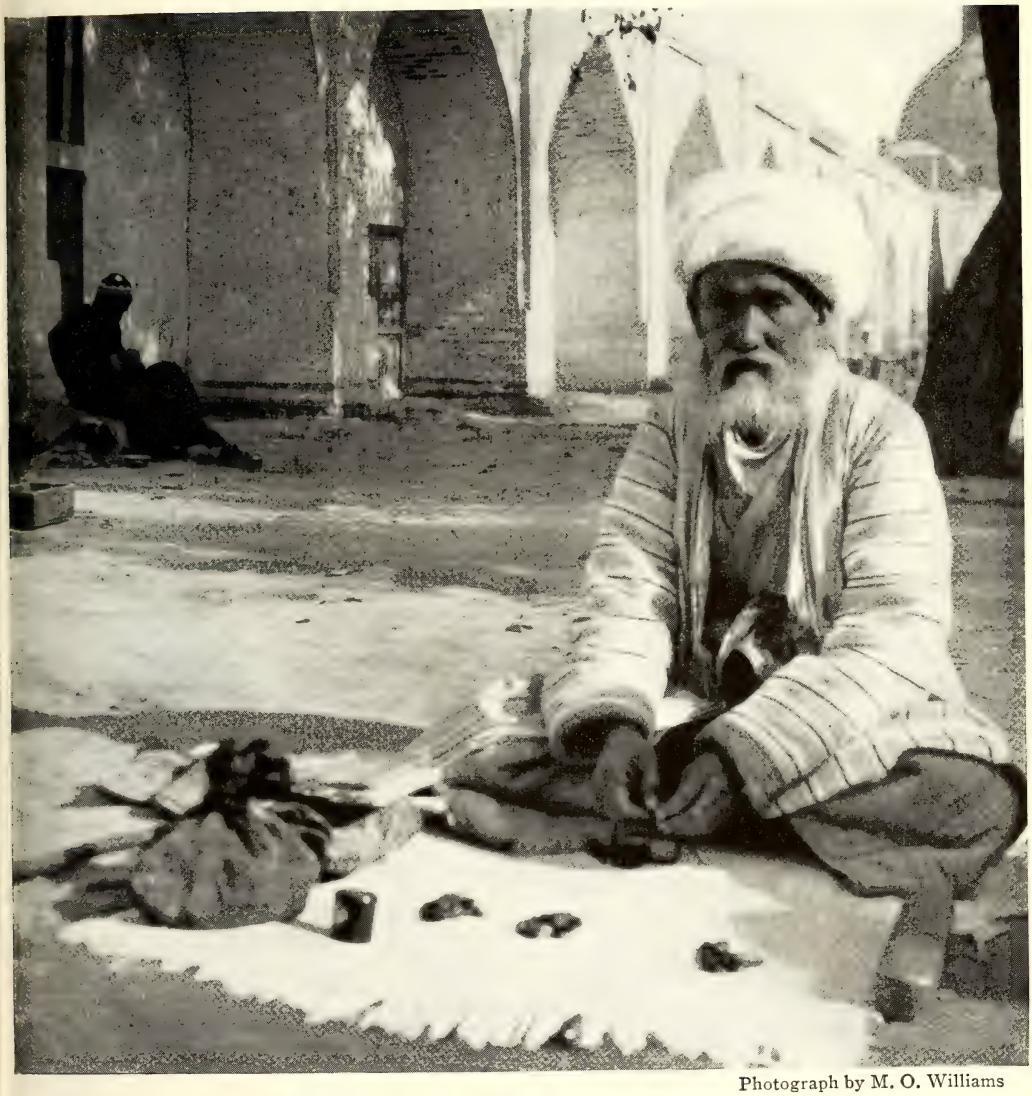
Down into Ferghana and out toward the Pamirs the express from Petrograd, with its sleeping cars and spotless diners, used to run; and across the protecting mountains the British Indian officials watched with undisguised dismay this onward sweep of Tsardom. But Russia's imperial power has been divided into warring atoms, and it is a Teutonic power robbed of its dream of Bagdad that now looks out on the romantic cities of Merv, Bokhara, and Samarkand as stepping-stones to the tropical materials and population centers of India and the East.

The modern Hadji has found that he cannot ride to India on the bowed backs of Moslem worshipers. But prostrate hordes in the unenlightened cities of Bokhara and Samarkand beckon the drama-loving Kaiser on to seek aids among the

Although the American traveler in the picture is six feet five inches tall, he is overtopped by the enormous wheel of the native cart

A SQUARE IN KOKAND, FERGHANA

The owner of the high-wheeled Sart cart sits astride the horse, while his veiled wife or wives ride on the springless vehicle



Photograph by M. O. Williams

A BLIND FORTUNE-TELLER IN KOKAND

In the practice of his profession the soothsayer uses small pebbles to divine the fate of his patrons. To the left is a native cobbler at work.

countless worshipers in the Great Mosque at Delhi. It is a long, long trail. Timur traveled it to his tomb.

THE STORY OF BAKU

How Russia's collapse will affect the tribes of Turkestan cannot be foreseen. But the outstanding event in the whole Turanian field is the landing of the British at Baku—the city of fire and blood. Baku is more cosmopolitan than Bokhara, for Bokhara is only cosmopolitan in an Asiatic sense, while Baku contains European influences and inhabitants as well.

From one end to the other, the Caucasus is a vast mine of copper, iron, tin, zinc, and other metals. In the lovely Alazan Valley of Kakhetia some of the world's finest wine is grown, and the North Caucasus is a granary where American agricultural machinery has reaped rich harvests; but at the east end of the Caucasus it is oil that has made modern history and made Baku a familiar

Photograph by M. O. Williams

A CAMEL DRIVER OF SAMARKAND AT THE END OF A PERFECT DAY

To the north of the land where Omar sang, the wine is perhaps just as red, and this son of the desert on his camel's back seems homeward bound after a plunge into metropolitan delights. Ruefully counting his remaining coins with unsteady hands, his turban in disarray on his dizzy head, he could have been lighted on his way by the twentieth century arc lamps at the corner of the fourteenth century Mosque of Bibi-Khannum in the background.

30°
40°
50°
60°
70°
BLACK SEA
CASPIAN SEA
Aral Sea
Sea of Azof
Constantinople
Odessa
Crimea
Sevastopol
Astrakhan
Mouths of the Volga
Gulf of Kara Bugas
Fort Alexandrofsk
Ust-Urt Plateau
L. Batyr
TRANS CASPIAN
Kungrad
Urgenj
KHIVA
Petro Alexandrofsk
Krasnovodsk
Great Balkan 6360
Baku
C. Apsheron
Tiflis
Batum
Kars
Erzerum
Trebizond
Angora
Smyrna
Constantinople
Tabriz
Teheran
Barfrush
Meshed
Sarakhs
Kelat-Nadir
Damghan
Shahrud
Sari
Resht
Kasvin
Hamadan
Kum
Sultanabad
Kashan
Ispahan
Yezdikhast
Abadeh
Shiraz
Bushire
Bagdad
Kerbela
Hillah
Babylon
Mosul
Aleppo
Damascus
Beirut
Jerusalem
Jaffa
Gaza
Suez
Cairo
Alexandria
Port Said
Ismailia
Kalaat-el-Akhdar
Tebuk
Akaba
Sinai Peninsula
Gulf of Suez
Gulf of Akaba
Mt. Sinai
Arabian Desert
Syrian Desert
Nafud Desert
Stony Desert
Euphrates
Tigris
Karun R.
Helmand R.
Oxus R.
Jaxartes R.
Kabul
Kandahar
Herat
Afghanistan
Persia
Arabia
Mesopotamia
Turkestan
Tashkend
Samarkand
Bokhara
Khiva
Merv
Askhabad
Kizyl Kum Desert
Kara Kum Desert
Aktyubinsk
Orenburg
Uralsk
Saxaulskaia
Kazalinsk
Perofsk
Kara-Uzyak
Fort Alexandrofsk
Ural R.
Emba
Irgiz
Turgai
Aktiubsk
Ulutavsk
Akmolinsk
Semipalatinsk
Lake Balkash
Lake Issik Kul
Lake Aral
Lake Urmia
Lake Van
Lake Tiberias
Lake Hamun
Lake Seistan
Lake Hamun-i-Mashkel
Lake Kelat
Lake Kabul
Lake Zurrah
Lake Hamun-i-Helmand
Lake Sarikamish
Lake Tuz
Lake Kara Kul
Lake Chad
Lake Kara Kul
Lake Issik Kul
Lake Balkash

name among business men the world over.

Baku is well built in spots and is tremendously wealthy; but it lacks the distinction of a city that has grown gracefully. It savors of the *nouveaux riches* and the boom town still, at a time when it is already declining as an oil-production center, with Grozny and Maikop rising to wrest its laurels from the oil port on the Caspian.

The political situation at Baku has always been delicately balanced, and in 1905, in February and September, it was a scene of brutality and massacre, to which was added the terrible spectacle of the burning oil fields—a present-day possibility. Combining as it does the ancient and the modern, the Oriental and the Occidental, the Moslem and the Christian, the Turanian, the Armenian and the Slav, with liberal mixtures of Kazan Tatars, Lesghians, Georgians, and Persians, Baku is the key to the political situation in Transcaucasia. A strong hand is needed to control the situation, and the British are just the ones to supply the needed morale.

One can only appreciate the importance of the British landing, simultaneously with Allied successes on the western front, by understanding something of the psychology of the peoples occupying the region.

Expediency rather than principle actuates all of them with the exception of the Armenians. And expediency urges something different with Allied victories in France and a British force at Baku than it did last March, when I was in Baku, when the news of the great Allied defeat on the western front was being given wide publicity by German agents, when the British Military Mission was removed from the train at Elizabetpol as they were trying to leave Tiflis, and when English officers in Baku were obeying the orders of the Tatars not to wear their military uniform.

To no one did the news of the British landing at Baku come with more surprise than to me, because I left there in April, and at that time German propaganda was alarmingly potent throughout Transcaucasia and north Persia. I was only one of about fifty Americans and British who were ordered to leave Tiflis March 23, and who saw the fighting in Baku from March 31 to April 2. But the whole outlook then was extremely pessimistic.

The very fact that even a small party of British are there now is significant, for had they come when I was there I doubt whether they would have been allowed to land.

JOINING THE CZECHO-SLOVAKS

From Baku we chartered a steamer to Astrakhan, and thus opened the Volga season, and in Astrakhan I left my American and English friends and went on into Russia alone, back over the route I had traveled nine months before, until I came to Samara and joined the Czecho-Slovak expeditionary force.

Every one who knows those true patriots respects them, and every American who knew them loved them as brothers in a world struggle to prevent Russia's subject peoples from becoming slaves of the Kaiser, as these varied races were once slaves of the Tsar.

WHAT THE WAR HAS DONE FOR BRITAIN

By Judson C. Welliver

IT IS well-nigh two years since Mr. Sidney Brooks told in the National Geographic Magazine "What Great Britain Is Doing" in the war. His article was an eloquent plea to Americans to realize the part his country was playing in civilization's crisis; and there was need for it.

At that time I was in England. America's declaration of war was only a few weeks ahead, but its imminence was not generally realized either there or here. Probably, save when the two countries have been at war, and during some trying months of our Civil War era, there never has been a time when misunder-

standing was more acute, on both sides, between the English-speaking countries.

Even the best-informed Americans had but inadequate conception of the burden Britain was carrying. Prejudice was rife in this country, and was sedulously cultivated in many quarters and by divers interests. On the other hand, opinion in Britain was settling down to conviction that America would stand any humiliation, submit to any insult, rather than fight.

Britain had without hesitation entered a war to which the enemy had not challenged her, because she believed she was doing right. She wanted the moral support, and she sorely needed the material aid, that the great daughter State could bring. Why was America so slow to see and understand? Were we indeed as sordid and selfish as the Anglophobes among us were wont to charge Britain with being? Were we merely a race of profiteers?

BRITAIN'S MORAL LEADERSHIP

Today, with our millions of soldiers and billions of wealth fighting alongside Britain's, we may remind ourselves of those trying months, and the reminder must make us grateful that things are as they are. It would be alike futile and foolish to ask how long our aloofness might have continued without creating incurable distrust between the two Anglo-Saxon nations and bringing disaster to the world.

For that she furnished the moral leadership, the instant courage, the true perception of underlying issues, Britain is entitled to recognition as the force which made this war, from its first gun, essentially a contest between systems rather than States; between ideals, not alliances; between good morals and bad morals.

It was the confidence of the nations, small and great, near and far, in this moral leadership of Britain that saved the world. That confidence nerved Belgium to bare her breast to the first blow, to meet the first shock of invasion with all she could summon, and to stay it for a little time while the forces of civilization could make their initial rally. That confidence brought Portugal, oldest of England's allies, into the field.

It brought Japan, newest and most powerful of Britain's allies, with shining armor and well-tried sword, into the arena as sentinel of the eastern gateways, guardian over the peace of the East, too long and insidiously tempted by the plotters of Berlin.

It brought the colonies and dominions of the world-flung Empire straightway to "shoulder arms" at the foot of Britain's democratic throne, bearing their yet unsought pledges of loyalty and devotion. The princes of India, the Boers of Africa, the men of Canada and Australia, the Maoris of New Zealand, trooped unbidden to their places in the ranks.

Yet the wealth and resources of the Empire—in men, money, and industry—were not the greatest of Britain's contributions. More potent than these was the fund of moral credit enlisted in the cause on the day when Britain gave it her endorsement. The scales of prejudice fell from a thousand million eyes in that hour when men envisaged the contrast between autocracy, prepared, and democracy, inspired.

BRITAIN SAVED HER DEMOCRACY

What has the war done *in* Britain, *to* Britain, *for* Britain, and *through* Britain, for the world?

First of all, it has saved Britain for democracy; it has reincarnated, in a new Britain, the spirit of democracy, the love of freedom, the devotion to fair play and substantial justice that for a thousand years have made Britain the leader of civilization. Other peoples may have at times displayed equal zeal in behalf of human rights and equality, but what one has been able to temper and direct these fine aspirations as they have been directed by the genius of the British race for political and institutional construction?

Before the war the world heard much about British decadence. Your true Britisher has an almost morbid tendency to misgiving about the state of the national soul. He is pretty positive, when affairs wear a favorable aspect, that there is something radically wrong just underneath; and when they look thoroughly bad, that they are really much worse.

The Britisher's passion for self-deprecation is only equaled by the German's

THE FATHER OF SIX OFFICERS IN THE BRITISH ARMY GIVEN THE FREEDOM OF HIS NATIVE CITY

The recipient of this unique honor, bestowed by the city of Peterborough, England, was Dr. Thomas James Walker, on the occasion of his 80th birthday. He has 13 children, and six of his nine sons hold commissions in the British army. Dr. Walker is seen on the mayor's right. In America, Governor and Mrs. Manning, of South Carolina, offer a striking analogy to this Britisher's contribution to the war; they have also given six sons to the service of their country.

for self-glorification. It is as hard for an Englishman to discern anything quite right in England as for a German to descry anything at all wrong in Germany. The German plumed himself on his ability year by year to increase his sales in England; but it never occurred to the Englishman to congratulate himself on the fact that, year by year, he somehow had more money with which to buy them. If a group of amiable spirits sat over their beer in a Berlin café till after midnight and their converse took on a slightly alcoholic fervor, the German capital was forthwith described as developing a "night life," becoming tremendously gay, and threatening to outshine Paris in the attributes of true cosmopolitanism.

But if the like happened in London, Britain shook its solemn head, decided that the national morals were going hopelessly bad, and regretfully realized that the social fabric was on the point of disintegration. The rest of the world fell into the easy habit of accepting the self-imposed verdict in each case, and ultimately indulged a good deal of unwarranted admiration for the amazing progress of Germany and unjustified worry about the confessed degeneracy of England.

AN AGE-OLD CONTEST

In a thousand other ways the two countries were as unlike as in this lack of capacity for accurate self-appraisement. There was plenty of room in the sun for both. The world needed all of the best that both could give. They ought never even to have imagined that they were sufficiently alike to be capable of intense rivalry.

And they never would have developed such an obsession but for the political institutions which made it possible for Germany to be brought under the control of a wicked, selfish, designing, criminal dynastic policy of world conquest. The contest between autocracy and democracy has been going on through all the ages. Because England and Germany were on the whole the foremost European representatives of the antagonistic systems, clash between them was inevitable.

Two short centuries had seen European civilization spread its sway over most of the world. Everywhere this outreaching carried the conflict. The world could not exist half slave and half free.

Under the spell of German egomania it was falling into a disposition to overestimate certain undeniable advantages of close-knit, strong organization, and to exaggerate the equally obvious disadvantages of that laxity and carelessness which tend to propagate when democracy rules and times are good.

At the price of those sops which autocratic Germany tossed to the proletarian Cerberus, the world might have been bribed to exchange freedom for a mess of welfare pottage. It is good that the contest came as early as it did.

BRITAIN SPIRITUALIZED BY THE WAR

Discussing war and after-war problems in a London club one day, an American observed:

"This war will be followed by a revolution." An Englishman in the party quietly retorted:

"This war *is* a revolution. Just look around you."

He was right. It is trite, but it is true, that Britain has been spiritualized by the war. The British democracy is no longer merely a political and institutional democracy. It is a human democracy. The social caste system and the pound sterling have been overthrown as rulers. Truth to tell, England was never so caste-bound or money-ridden as popular belief, there and elsewhere, pictured it. But it loved its traditions, and this was among the most sacred.

The ordeal of war has made Britain know that humanity is the most precious thing in the world. No man could give more than his life; no man could give anything comparable to his life; and when all men willingly offered that last sacrifice, they could only offer it for a common ideal which must be the highest possible ideal—for humanity.

The rich man discovered that his wealth was dross, the titled person that his title was tinsel; the great common denominator among them all became human life and human souls.

Neither Magna Charta nor the old English revolution meant any such stir-

ring in the depths of the British soul as this has meant, for this has come in a time and to a people alive with social consciousness.

Britain, giving its all for freedom, has taken time to ask what it means by freedom, and has adopted some new definitions. Freedom is not again to mean the liberty of the few to live in palaces and the many to live in hovels; of the many to pay with their toil for what the few consume at their ease. No, this is not Bolshevism. An ignorant peasantry might translate it into Bolshevism, but the English nation is translating it into terms of social and industrial democracy.

If this be socialism, make the most of it. The Englishman, even the Englishman who a little time ago would have been called a Tory (though today he is apt to be the most liberal of his race), prefers to call it socialization. His notions about it are intensely practical. For example:

HOW BRITAIN SOLVED THE MILK SHORTAGE

Before the war had even approached its climax, Britain discovered that it faced a shortage, among other things, of milk. The government guaranteed very high prices to induce production; but the sacrifice of herds, plowing up of grass lands, and deficiency of labor rendered stimulative efforts futile. There was not enough milk to go round in the old, easy way, and administration stepped in to insure first against profiteering and second that those who most needed it should have their share of the milk.

Observe the results. Some months ago the British Medical Association discussed some remarkable vital statistics. It found that for the last preceding year the death rate among infants under five years old had been about one-half the rate in prewar times. It was a phenomenon beyond the comprehension of anything but common sense. The medical authorities applied that test and issued their verdict.

For the first time in the modern history of Britain there had been milk enough for all the babies, and good milk.

But if the adult patron of a public eating-house buys and drinks a glass of milk as a beverage, he is liable to a fine of five pounds, and the proprietor subjects himself to a like penalty.

If anybody imagines that hereafter Britain will return to the customs of "the good old days," when for want of milk twice as many British babies enjoyed the privilege of dying, he is far from understanding what is going on in the English public mind today.

GOUT AND HUNGER ALIKE BANISHED IN BRITAIN

Britain, sending its merchant fleet through all the danger zones, transporting soldiers, munitions, supplies, keeping the blood circulating in the arteries of the commercial world, has lived month after month fairly on the brink of starvation; yet rationing has been for the greater part voluntary, accomplished through the coöperation of a willing public with a patient food administration.

Never in Britain's history have so many people been amply fed; never have so few been hungry. Never, it may be added, has the population enjoyed so nearly unanimous immunity from those aristocratic digestive ailments which constitute the penalty of eating not wisely but too well. A search warrant would hardly find a dozen respectable cases of gout in the entire Kingdom.

Armies of people in Britain are for the first time wearing their old clothes, and glad to do it; other armies are for the first time wearing good clothes, and equally pleased. We have heard quite too much about the extravagances of the munitionettes who buy Astrakhan furs and impossible jewelry. After all, people associate more, and more intimately, with their clothes than with any other incident of life.

To be decently clad is the first essential to self-respect. Other and more exalted tastes are presently induced. The factory girl who begins with dressing like a lady presently finds herself disposed to *be* a lady.

And the community is making arrangements accordingly. In recognition of her services in shops and factories, in offices and on the farm, manufacturing explosives at Gretna and doing the work of tens of thousands of men just behind the firing lines in France, woman has been

A LARGE BRITISH TROOPSHIP IN DURBAN HARBOR

Photographs from W. B. Wilson

BRITISH IMPERIAL TROOPS IN THE STREETS OF DURBAN, SOUTH AFRICA

Sir Eric Geddes, First Lord of the British Admiralty, is sponsor for the statement that since the beginning of the conflict the British navy has escorted overseas to and from all theaters of war some 16,000,000 men belonging to the armies of the British Empire, and the loss has been one-thousandth part of a man per hundred carried, from all causes—marine risks or enemy actio

Photograph by Paul Thompson

GOOD NEWS FROM THE FRONT, TO WHICH THEY MAY NOT RETURN

These wounded soldiers on the steps of a London hospital have recovered sufficiently to be sent to a convalescent home, for which they are to leave in a few days

given the ballot. The monarchic democracy of England has reached the goal of universal suffrage several laps ahead of America.

TWO HISTORIC SESSIONS OF THE HOUSE OF COMMONS

The organization—it can hardly be called a system—for public education in Britain is notoriously inadequate. Many people knew that before the war, and the war's shock aroused the nation to action. I have sat through two absorbingly interesting sessions of the House of Commons. One was on a day of political crisis, when some innocent souls thought Mr. Lloyd-George was in danger of being driven from power, and when, with the eyes of the world focused on Westminster, with the benches and galleries of the Commons packed, the Prime Minister in a great speech drove his enemies from the field in utter rout. The other was on the day when Mr. Fisher, Minister for Education, presented and explained in much detail an ambitious but dry-as-dust program for educational reforms.

The one occasion saw a tremendously dramatic political spectacle; the other, a three hours' explanation of a complex piece of constructive legislation. Yet I am not sure that Mr. Lloyd-George's was the greater triumph. To a House of Commons that had already voted away something like a quarter of the national wealth in war appropriations, Mr. Fisher calmly made his demand for $75,000,000 to inaugurate a complete new educational organization — and was enthusiastically applauded!

ONE OF THE MOST COMPLETE EDUCATIONAL SCHEMES EVER DEVISED

That applause was the testimony that Britain intended to help the munition girl who aspires to *be* more like a lady; to help the farm boy who, while digging trenches in Flanders, has learned to see

Photograph from American Red Cross

A GROUP OF WOUNDED AMERICAN SOLDIERS WHO HAVE BEEN SENT TO ENGLAND TO REGAIN THEIR HEALTH AND STRENGTH

The scene is the lawn of Dartford Hospital, near London. Mrs. Walter Hines Page, wife of the former American Ambassador, is seen dispensing flowers and cheerfulness among the boys who have been sent from the front to recuperate in England.

life with a wider vision than when plowing furrows in Kent.

Like every other British reform, the educational act carefully utilizes the long-laid foundations, avoids unnecessary shock to tradition, saves and builds upon whatever has been found good. It has since become a law, and for its coördination of all grades from kindergarten to university, for its plans to make education compulsory, practical, and cultural; for its guarantees of the full measure of educational opportunity that every type of adolescent mind may justify, it seems fairly to justify the verdict of some educators, that it is the most complete and satisfactory educational scheme ever devised for any nation.

If space would permit, a digest of this measure, which combines a scheme of universal education with new and necessary restrictions on child labor, would give an excellent idea of how the British have managed, while meeting the demands showered on them by a warring world, to find time for constructive reforms.

Here in America a few people have just begun to study the amazing data about illiteracy, our 11,000,000 alien residents, use of foreign languages in great communities, and the physical degeneracy of great classes, which have been made available through the working of the universal military service act. Britain has studied its corresponding data, and has taken measures to end disgraceful conditions.

Foreseeing the myriad problems of after the war, they have set up in Britain a Ministry of Reconstruction, headed by Dr. Charles Addison, which has produced a great mass of illuminating studies in existing conditions, with plans for their

Photograph by Paul Thompson

ON PARADE WITH THEIR SCHOOL BOOKS

Officers of the Edinburgh Officers' Training Camp, from Highland regiments, on parade with their school books. The young officers have 17 different books on military work to master in the course of each month's training.

Photograph by Paul Thompson

BRITISH SOLDIERS FROM THE FRONT ON CHRISTMAS LEAVE

"Some of the lucky ones." The arrival at Waterloo station of soldiers loaded with presents and bunches of holly and mistletoe.

IN PEACE TIMES THEY MADE ARTIFICIAL FLOWERS: NOW THEY ARE FRUIT HARVESTERS

And judging from their jovial expressions, the useful occupation has its own reward in high spirits and excellent health as well as in the satisfaction of giving their best efforts to their country. There are nearly 5,000,000 women at work in England today, and of these a million and a half have directly replaced men.

reform. It is calculated that 1,000,000 new houses must be provided as fast as possible after the war. Very well; municipalities will build them, using their own credit, backed by the national government's. The government has set a splendid example of how to improve housing and sanitary conditions wherever it has built for war workers.

Out of the United Kingdom alone, with its 46,000,000 population, have been drawn 6,000,000 men for military and naval service; 1,250,000 have come from the dominions and colonies and 1,150,000 more from India.

A MILLION BRITISH LIVES GIVEN TO THE CAUSE

A million British lives, it was recently stated, have been given to the cause; yet this sacrifice will only slightly affect the Kingdom's population, because improved living conditions of the civil population have effected so great a compensatory saving of life at home.

Only recently has the birth rate been appreciably depressed, while the saving of infant and adult lives has been astonishing. With all its boasted efficiency and talent for organization, I venture to say that Germany has been outstripped in these regards by war-time Britain.

Alongside the military mobilization that produced the gigantic British army and approximately doubled the navy has gone a civil reorganization that has made it possible not only to create and continuously expand the war industries, but to keep alive the world commerce by which the nation lives. In bulk the exports of Britain have indeed greatly decreased; in value they have been amazingly maintained; which means support of British credit throughout the world.

And not only have the exports maintained British credit and upheld the pound sterling; they have been so directed and handled as to lay a foundation for British trade after the war, whereon will rise a structure that will be more than ever the despair of German competition.

Although America has gathered in half the world's monetary gold, we have not borne the sole responsibility of directing the war's finances. In truth, we have loaned money to the world, while Britain has both loaned money to it and—far more important—financed it. British credit and world-reaching banking organization have accomplished amazing results with bills of lading and commercial acceptances that we are just beginning to realize.

CARRYING HUMANITY'S BURDEN

On the afternoon of the coldest day of the bitter winter of 1916-17 I landed in London, after shivering through the ride from Liverpool. A robust Jehuess hoisted our bags atop her taxi and drove us to a hotel where we got quarters. That night we were refused coal for the grate in our room; there was no coal save for invalids.

But that same week a convoy of vessels laden to the last pound with coal for suffering Norway had cleared from a British port and been safely escorted by British destroyers and cruisers to its northern destination. That awful winter Britain did without coal in order that Scandinavia, France, and Italy might have it. Britain—that is, except the munition works; they must have their allotment, because the armies of Britain and her allies must be equipped.

All the way through, it has been for Britain to carry burdens, supply deficiencies, provide means, perform the tasks that were neither spectacular nor heroic. The British navy, working almost in secret, has been the backbone of the Entente cause. Without it the war would have ended, as Germany planned, before the close of 1914. Germany was throttled from the beginning by a fleet whose very location, in the far northern Orkneys, was not known to the world till months after Germany was sealed tight.

It was for Britain to send the heroic first army that died in the first hundred days—but saved the Channel coast. England must needs provide the hopeless expedition to relieve Antwerp—a maneuver that failed in its immediate purpose, but saved Belgium to the Entente.

Britain bore the horror of Gallipoli without wincing. When the hour came for the tables to turn, when glory and victory were at length among the possi-

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A BATTALION OF W. A. A. C.'S ENJOYING A REST ON THE GYMNASIUM GROUNDS AT ALDERSHOT

They are awaiting the arrival of King George and Queen Mary. His Majesty on this occasion is to decorate heroes of the British army and navy.

bilities, Britain, in the interest of unity and efficiency, placed her army under a French commander-in-chief and never afterward questioned his management of the struggle.

NOT A MILITARY COUNTRY

Britain was not a military country. Its facilities for producing the necessaries of war were hopelessly inadequate to such a contest; they had to be created; and while handling a sea campaign that might well have been esteemed her full share, providing ships and money and supplies, she built the organization for producing munitions on a scale never attempted before.

Even now, how many people know that the Vickers-Maxim establishments in England employ more people than all the Krupp works? Who realizes what it means for the British navy and transport service to have transported overseas 16,000,000 soldiers, first and last, with losses almost negligible?

Take the air service. It required the creation, absolutely, of an immense industry—so big, in fact, that in its ramifications it was said a year ago to be the greatest single war industry in the country. It requires 30,000 aëroplanes a year to keep 1,000 at work constantly on the fighting lines, so great is the wastage. England has been accomplishing more than this; unostentatiously but effectively, she shouldered this along with the other burdens.

And, doing all this, Britain still had industrial resources that enabled her to aid America in providing hundreds of thousands of uniforms for our soldiers before our own sources of supply and machinery of production were fully organized.

There is an incident which I have always thought peculiarly illustrates the sort of services Britain has been rendering all along. During 1917 tonnage became so scarce that new restrictions were put on imports and oranges were barred. They came mainly from Spain, and a huge uproar was raised in that country. At length—so the story went in London at the time—Spain delivered an ultimatum: unless her oranges were taken, she would not let her iron ore go!

Italy and France must have iron ore from Spain or the war might as well be stopped. So Britain quietly lifted the embargo on oranges, and somehow scraped up the shipping to bring the oranges, and also to deliver the ore to France and Italy.

WHAT BRITISH WOMEN HAVE DONE

Everybody knows how British women have taken the places of the men in industry, but nobody who has not seen can understand. At Sheffield we saw a gun being turned into shape, so big that we were pledged not to publish its caliber lest the enemy learn too much, and women were operating the giant lathe.

At Gretna Green were near 40,000 people in one plant making high explosives, and about seven-eighths of them were women and girls.

On the Clyde we found mile after mile of shipways lining that pathetically little stream that is the headquarters of the world's shipbuilding industry, and women and men worked side by side on the scaffolds, at bolting and riveting, forging and casting, as if they had always done it.

In a great foundry where casings for the big naval shells were cast, we found the floor filled with women in overalls and oil-cloth caps, doing practically all the work.

At Birmingham, where the cartridges for rifles and machine-guns are made by millions, women were operating the machines, with hardly a man in sight. Outside, at the shipping warehouses, we saw the boxes with labels stenciled on them, ready for shipment. They were going to France, Italy, Saloniki, Mesopotamia, South Africa, Russia, the South Seas—everywhere that Britain and the allies were fighting.

What about these women, now habited to their place in industry, to the self-respecting sensation of doing their part in the world's work, to earning good wages and being independent? Will they willingly give up their places to the men after the war? The question is asked constantly. I am going to attempt an answer, based on what I have learned of the British national ambition and the British woman's conception of her relation to it.

Britain has the idea that this world has seen the last of over-production. It has become convinced that the real difficulty that gets things out of economic kelter is under-consumption. So it proposes that the ladies shall keep on working, the men shall join them, and arrangements shall be made for such a distribution of their joint product that there will be no over-production!

THE LESSON OF CONSUMPTION

The greatest lesson the British people have learned from the war is this of consumption. They have acquired the habit of being steadily employed at good wages. They have learned how to spend their money carefully, sanely, thriftily. They have learned to save; the bond-selling campaigns have taught that. Thrift came from ebriety, serious-mindedness, and the necessity of stretching all supplies to make them go round. Money ceased to mean so much when one, though he had a bushel of bank notes, wasn't allowed to spend more than "one-and-thrippence" for afterno n tea, with other meals in proportion.

London is full of great houses vacant. Income taxes have done part of it, the fuel controller much. Who wants a 40-room house when the coal administration allows only fuel to heat seven rooms, and when servants cannot be had at any wage? So the great places stand empty. while there is a scarcity of middle-class houses; palaces are too expensive, hovels no longer good enough.

The leveling-up-and-down process is actually happening, and England as a whole likes it. Lincoln said, "God must have loved the common people, for he made so many of them." As for England, the war filled them with the conviction that they are *the* people, and the government gave them all—men and women—the ballot.

THE FUTURE OF THE HOUSE OF LORDS

The minority that doesn't like the new order will have no power of veto. The House of Lords is far advanced on the way to a reorganization that will make it almost another United States Senate—elective and without hereditary right to seats. A parliamentary commission has reported the plan, and it is nearer adoption than woman suffrage seemed on the day war broke out.

After that will come adaptation of the federal system to the kingdom. Premonitory rumblings in public thought are telling of it. There will be legislatures, like those of our American States, for Scotland, Wales, metropolitan London; probably two for Ireland; one and perhaps more for England outside London; and all these States will be represented in the Westminster Parlaiment as ours are in the Congress at Washington.

Perhaps the Dominions will at length send their delegates there, too; if not, some sort of truly imperial parliament will make place for them and for closer political union of members that the war has drawn into a new spiritual community.

A BETTER RACE OF BRITISHERS

A better race of British men and women will come out of this war. Notwithstanding the physical misfortune to the race of having so many of its best men killed or maimed, Britain will gain vastly more than it will lose through the training, discipline, and physical improvement of its manhood; through teaching reliance, self-respect, realities, true values. The world will gain greatly by a renaissance in Britain of the spirit that made Britishers its pioneers, colonizers, civilizers, administrators. And that renaissance has been achieved.

There will be a movement of Englishmen to the distant quarters of the world; but enough will remain at home to build the motherland to a greater and better position.

Misgivings about Britain sinking to second rate among the powers are at any rate some centuries premature. The tight little island will continue "the power-house of the line." It will be developed as never before. It has found itself anew. There is today a perfect mania for efficiency, quantity production, elimination of lost motion, suppression of waste.

One thing that Britain has done during the war will have an effect on the national life not yet to be measured, but certainly far-reaching. That is the rehabilitation of agriculture. In 1918, we

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MOTOR DRIVERS OF THE BRITISH WOMEN'S LEGION

The organization to which these war workers belong is similar to the American Women's Motor Corps. They are attached to the Canadian Forestry Corps and are stationed at Windsor Park. Their log huts have been built by the women foresters.

are told, the country has produced foodstuffs enough to feed it for 40 of the 52 weeks. Nothing like that has been done for half a century. It is one of many instances of accomplishing the impossible. Sacred parks and beloved areas of grass lands have been sacrificed; but the food was produced, because there were no ships in which to import it.

Not again will Britain permit itself to be dependent for its daily bread on the uncertainties of importation. Agriculture is become a chief object of national solicitude, and will remain so. The 1918 achievement would not have been so striking in normal conditions as to labor, animals, implements, fertilization, and the like; but in the circumstances of its accomplishment it is one of the war's wonders.

Britain has learned anew what a great agricultural industry means; has learned that the land is for use first, ornament afterward. Taxes on incomes, rates on the broad acres of manorial estates, are solving the land question. The great holdings are being disintegrated at a rate of which Americans have little conception.

Single proprietors have sold at auction hundreds of farms. In one case a nobleman specified that tenants should have preference, and practically all his holdings went to them. Some of the lands had been in his family 600 years, and some of the farms had been held by the same families of tenants for 300; but never had there been, till this sale, the thought of possible ownership.

If this disintegration of land holdings does not proceed fast enough to satisfy the public desire, it will be accelerated by application of further taxation measures which the people have in mind. Mr. Lloyd-George, apropos certain budgetary reforms that when enacted, did not es-

Photograph by Paul Thompson

A WAR-TIME SHEPHERDESS IN THE PLEASANT HILLS OF SURREY

"Britain has learned anew what a great agricultural industry means; has learned that the land is for use first, ornament afterward. Taxes on

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THE LUMBERJACK YIELDS HIS OCCUPATION TO THE LUMBERJANE IN BRITAIN UNTIL THE WAR IS OVER

These sturdy young women have not only learned to wield the ax and the cross-cut saw, but they load the tractors and fasten the logs in place with heavy chains

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UNDER 250,000 IMMENSE GLASS BELLS THIS GROUP OF WOMEN WAR WORKERS IS HELPING TO RAISE FOOD FOR GREAT BRITAIN

The scene is the Burhill Intensive Gardens, at Horsham, where, in compliance with the British Government's instructions, every available inch of space is being utilized to supply the British troops and civilian population with food. Under this sea of bells a quarter of a million heads of

pecially endear him to the "best people," did much to popularize the works of his American namesake, Henry George; and these two Georges will have a good deal to do with directing British policy for some time after the war.

But, though the British may become substantially self-supporting as to agriculture, they will, of course, remain primarily an industrial, commercial, maritime, and financial people. With all the drafts that war has made on its manpower, England has actually increased its iron and steel production.

SHIPBUILDING AND WORLD COMMERCE

As to ship-building and its relation to world commerce hereafter, those kindly folk who fear the loss of British sea supremacy would do well to see the Clyde, the Tyne, and the Belfast shipbuilding districts, and to learn about the new national shipyards on Bristol Channel. After nearly four years of war, in which it had borne the lion's share of shipping losses, the British merchant marine was still able, during the critical weeks of last spring and summer, to transport 60 per cent of the first American army of two million soldiers sent across the Atlantic.

The country's industrial plant has been expanded during the war beyond all popular knowledge. Moreover, the expansion has been directed by an unwavering purpose to make the new establishments easily adaptable to peace production.

The nitro-cellulose plant at Gretna Green covers an area of nine miles by five. It requires a hundred miles of plant railways. It has been built entirely since the war began, and, as it produces nothing but high explosives, might be reasonably regarded as one industry whose product would hardly find a market in peace times.

Yet its management assured me there was every prospect that the demand for explosives in engineering work plus the market for celluloid specialties in endless variety would keep the establishment busy with merely some rather easy adaptations of its products.

A RECONSTRUCTED COMMERCIAL WORLD

The new Ministry of Reconstruction, the Board of Trade, foreign trading houses, bankers, consular service, have coöperated throughout the world to strengthen Britain's hold on foreign markets.

In anticipation of changed conditions after peace returns, of increased credit requirements to restock the warehouses and restore the public utilities of the world, a series of great banking consolidations has taken place in England in the last year. They are part of the economic mobilization for the competitive struggle after the war.

The alien property authorities of Kingdom and Empire have been quietly tracing out and untying the bonds by which intriguing German interests had established hold on many industries, markets, financial and commercial opportunities. The German salesman who goes out to offer his wares hereafter will find himself dealing with a very much reconstructed commercial world. Whatever he may have thought of British competition prior to August, 1914, he will find it the real thing along about August, 1920.

HOW CANADA WENT TO THE FRONT

By Hon. T. B. Macaulay, of Montreal

THE work which the United States has undertaken in connection with the war is so vast, and the spirit in which it is being carried out is so magnificent and so enthusiastic, that what we Canadians have accomplished must of necessity appear rather small in comparison.

You of the United States are to have the honor and glory of being to a large extent the deciding factor in bringing this terrible war to a happy conclusion, and of turning what might possibly have been a drawn battle into a glorious victory. The efforts which you are putting forth are the delight and admiration of your

Allies and the dismay of Germany and the Kaiser.

We Canadians are delighted at the manner in which you have taken up your task.

The story of Chateau Thierry has stirred all our hearts.

The help you have given far exceeds the men and munitions you have furnished, great and valuable though they are, for you put new heart and vigor and sureness of victory into the French and British troops, who had begun to be a little war-weary and stale after four years of struggle.

RALLYING TO THE MOTHER COUNTRY

After four years of hostilities, it is difficult to place ourselves in thought back to the early days, when the great German military machine, which had been preparing for forty years, was crashing through Belgium and northern France.

The sky was clouded and the outlook dark; the brave men of France and Britain were being overwhelmed by superior numbers; we had few guns to answer the German artillery, and ammunition was so short that many of our guns were restricted to five rounds a day—it was at that time and under those circumstances that Canada had the privilege, on account of our British connection, of getting into the fray, and we all feel a joy and pride that we were able to do something, even though but little, to help stay the Hun in those gloomy days.

At the beginning of August, 1914, we were not only unprepared for war, but had so long breathed the atmosphere of peace, that we were unable at first to realize the importance of what had happened and the magnitude of the crisis into which the world had been plunged.

CANADA SAW HER DUTY AS A PRIVILEGE

As to our duty, there was no doubt. From the Atlantic to the Pacific we felt that it was both our duty and our privilege to put our whole weight into the struggle, side by side with the mother country. But what were we able to do? In what way could we help?

As for military organization, we had practically none. We had 60,000 militia, but they had had little training and had taken their duties lightly. Bernhardi had said that in the event of a European war Britain's dominions and colonies could be completely ignored. As for financial help, we had been a borrowing country, and how could we begin to lend?

But our national spirit rose to the needs of the occasion. Our people quietly determined to do their best. The call went out for 25,000 volunteers to go overseas, and within a few months we had sent off not 25,000, but 33,000. Within two months of the outbreak of war some of our troops who had been hardened in South Africa were fighting in France, and within seven months even our green troops were on the field engaged in a life-and-death struggle with the Huns—and holding them!

Further detachments were despatched as quickly as they could be raised and drilled, until we now have a total of over 550,000 enlistments, and will soon have 600,000, and of these about 450,000 are already in Europe. Every month is adding to the number. We have promised that we will send over not less than 500,000, and we propose to keep that promise.

CANADA'S CONTRIBUTION OF MEN AND HER CASUALTIES

Our enlistments, including those secured under the Military Service Act, already number about one in thirteen of our population. In the same proportion the figures for the United States would be around 8,000,000, which is about the number you are preparing to raise.

We began with voluntary enlistments, but, just as in the mother country, we had to come ultimately to the draft system. You have profited by our experience, and have very wisely adopted the draft system from the beginning. We fully agree with you that this is the only right and fair method, and that it is besides vastly more efficient and more economical.

And how about the casualties? In the early days of the war, when we were short of artillery, and even of rifles, and were unprepared for poison gas, we suf-

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IN THE FLAX FIELDS OF FAIR ENGLAND

Who would not pay a premium for linen woven from the flax gathered by such capable hands and with such a winning smile!

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BRITISH WAR WORKERS WEARING GAS MASKS WHILE LOADING SHELLS WITH POISONOUS CHEMICALS

The gas shell is deadly even before it is fired from a gun, and these industrious young women are required to wear gas masks while engaged in the hazardous occupation of filling the projectiles. Overalls and caps are also part of the equipment, and for the time being feminine finery is not only forsaken, but forgotten.

fered heavily. Up to June 30 of this year we nad:

Killed in action	27,040
Died of wounds	9,280
Died of disease	2,257
Presumed dead	4,342
Missing—probably dead	384
Total deaths	43,303

In other words, of the total number who had gone overseas up to June 30 last, 11.3 per cent were already dead.

In addition there were—

Wounded	113,007
Prisoners	2,774
	115,781

so that in addition to the deaths, 30.2 per cent had been wounded or made prisoners. It is a comfort to know that between 30,000 and 40,000 of the wounded were ultimately able to return to the firing line.

The total casualties were 41.5 per cent of the number who had gone overseas. But even this does not tell the full story. Most of those who had but recently gone across had, of course, not been long exposed, and the casualties were chiefly among those who had gone over early. Among them the casualties were tremendous. Those noble fellows paid a terrible price, and I can assure you that among them were many who were the very cream of the Canadian nation.*

WHEN GERMANY LAUNCHED HER FIRST GAS ATTACK

When I think of those early days, my mind goes back to April and May, 1915, to the second battle of Ypres. It was then that the Germans made their drive for Calais and the Channel ports.

Alongside our Canadian boys were French troops from Morocco, and against them the Germans first used their devilish gas. The Moroccans broke and fled, and small wonder. Nothing remained but our Canadian boys between the Germans and Calais, and they were many times outnumbered by troops that were supported by efficient artillery.

Our lads spread out to cover the extra ground, but were driven back. Some of the Canadian guns were captured, and our Montreal Highlanders and others were determined that no Canadian guns should fall into the enemy's hands, and charged through a wood and retook them. The Germans thought that we must have heavy reserves or we would never attack in such a way, and instead of pushing through they entrenched themselves as did our boys also, and time was gained.

In the next few days reserves were brought up and Calais was saved. It is said that a German major was taken prisoner, and as he was being led back to the rear and saw nothing where he expected to find masses of troops, he was distracted, and again and again cried, "Let me go for half an hour and Calais will be ours." But Calais was saved, and the course of the war has been different because of what our Canadian boys did that day.

Many of those who took part in that terrible struggle I knew personally. Before my eyes there rises the picture of Major Norsworthy. In his early thirties, handsome and vigorous, he had brains, sound judgment, self-reliance, and energy such as few possess, and had he lived he would certainly have been one of the most prominent financial men of Canada.

And Captain Guy Drummond, aged about 28, son of Sir George Drummond, inheritor of wealth and honored name, tall, refined, the very finest type of the high-principled gentleman. When last seen he was using his knowledge of French, trying to rally the flying Moroccans. But they, poor fellows, were past being rallied, as they fled, gasping for air, their faces blue, and with death already fastened upon them, for of those who fully inhaled that devilish poison few would survive a year of agony, and the rest would be invalids for the remainder of their lives.

But perhaps the story as told by a fine young fellow, a private, Billy Maclagan, who has often been in my own house, may bring the details home to us more closely. Billy went over with the first contingent, and is one of the few, the very, very few, who have gone through

* According to official figures issued from Ottawa on November 12, Canadian casualties, up to eleven days before the signing of the armistice, totaled 34,877 killed in action; 15,457 dead of wounds or disease; 152,779 wounded, and 8,245 presumed dead, missing in action, and prisoners of war—a total of 211,358.

the four years of struggle without a scratch. He wrote us his experiences. They were spared the worst of the gas, and put mud and spittle on their handkerchiefs and tied them on their faces. He gave us the full details of how, later on, out of the mist, flood after flood of Germans came charging on.

Our boys fired and fired until the German dead lay thick before them, and their gun barrels were red hot. And still they came on, wave after wave of gray figures. We held them, while our own numbers dwindled alarmingly. The captain went, then the lieutenant, and at last in the whole trench there remained but three—a corporal, Billy, and a drummer boy of fifteen.

The Huns paused and the three slipped out over the top and crawled back. The little drummer boy gave in under the sights he had crawled through and over, and began to shriek, covering his eyes. The big corporal grabbed him and thrust him within his own great coat, buttoning it up, so that the little fellow could see nothing, and so they continued. At last they met reinforcements, and Billy returned with them to show the way. They were even then but a handful, but the Germans did not know that and the attack was stayed.

"NONE BUT GREEN TROOPS COULD HAVE DONE THAT"

It was a French officer, I believe, who said that no veteran troops could have done better. Then he corrected himself, "None but green troops could have done that—they did not know they were beaten; they did not know enough to retire!" The Channel ports were saved, but at what a cost!

But while we are proud of our Canadian boys, do not suppose that I claim any special superiority for them. Scotland has in the British armies about twice as large a proportion of her population as has Canada. There are glens in Scotland where not one man of military age is now living. And nothing makes our Canadian soldiers more annoyed than any claim by those at home that they are any better than the troops from Scotland and England.

We from Canada feel that we have done well, but we take off our hats to the mother country. One of the lessons we have learned from the war is to appreciate the Scotchman, the Englishman, and the Frenchman as we never did before; and we appreciate them now because we know them now.

CANADA AND HER VICTORY LOANS

Now let us turn to finance:

We are a young and borrowing country; we have been an extravagant country, and we thought we could do little toward financing the war. At the beginning the mother country advanced money to the various dominions at the same rate as she herself had to pay, but by 1915 we began to rely on ourselves. The government issued the call for the first domestic loan. They asked for $50,000,000, and wondered if they would get it. The subscriptions came to over $113,000,000. On the strong urgency of the larger subscribers the government took $100,000,000 of this amount.

In September, 1916, they asked for $100,000,000, and we offered them $201,000,000.

Six months later, in March, 1917, they asked for $150,000,000, and we offered them $254,000,000.

In November of the same year they asked for yet another $150,000,000, and we offered them $419,000,000. For this loan the government had reserved the right to accept all subscriptions, and they did take $400,000,000.

If in 1915 a man had told us that within the next two years the people of Canada would supply the government with $750,000,000, or $100 for every man, woman, and child in the country, he would have been looked on as a wild visionary. People do not know what they can do until they really try, and we surprised ourselves.

The subscribers to our first loan numbered 24,800; to the last loan they numbered 820,000, or nearly one in nine of the population. And now our government has asked for $300,000,000 more, and I shall be surprised if the answer is not at least $500,000,000, and I imagine that they will take it all.

We shall have a heavy debt, but what of that? We shall carry it with ease, for

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WOMEN AT WORK ON MINE NETS

Not only in the actual manufacture of explosives and shells have Britain's women been bearing a large part of the burden of war, but in preparing these instruments of destruction for immediate use. This group of war workers is engaged in wiring floats for mines.

we are young and growing, and our shoulders are broad. Canada never was so strong or so prosperous as at this moment. The safest government bonds in the world are those of the United States and Canada, and I bracket them together as regards security.

Not merely have we raised these large amounts of government loans, but we have kept up the price of our bond issues, so that every person who bought a Canadian Victory Bond can today get for it on the spot more than it cost him. The brokerage and bond houses of the Dominion have been organized into a great committee, and whenever any bond is offered for sale it is at once resold to other purchasers.

The demand for bonds has been stimulated until it now exceeds the supply, and the market price is above the cost price. Our government can borrow this year on slightly better terms than it had to give last year. That speaks for itself for the value of the bonds and the credit and wealth of the country.

In addition to paying for the upkeep of our own troops, Canada has granted war credits to the Imperial Government of $532,000,000 with which to purchase foodstuffs, munitions, etc., in the Dominion. Our banks have loaned the Imperial Government $200,000,000 more. But despite the withdrawal for government loans, the deposits in our banks are $300,000,000 more than they were at the beginning of the war. The country never was so wealthy.

HOW THE DOMINION TURNED TO MUNITION-MAKING

Prior to the war we lived too easy a life, and our municipalities and corporations borrowed freely in Britain. When the British markets were closed we turned to the United States. Of our

provincial and municipal securities sold in 1916, 85 per cent went to the United States. Of similar securities sold in 1917, only 2½ per cent went to the United States.

Our expenditures for war purposes have now risen to about a billion dollars. A considerable amount of this has been raised from taxes. There has been a tremendous increase in the national revenue. But the way in which this extra money has been raised and the kind of taxes which have been imposed would, I am sure, not be interesting. You know all about that sort of thing in your own country. Perhaps I had better say the details would be interesting but not very pleasant.

But more than men and money were required. There was a pressing need for munitions with which to meet the German hordes. Canada had never been a great manufacturing country. But again we surprised ourselves, for we have already supplied 60,000,000 shells, which I have no doubt have done good work. We have furnished munitions to the value of $1,000,000,000, and will soon have furnished another $200,000,000 worth.

We are helping in shipbuilding, too, for we expect to turn out this year about 500,000 tons of new shipping, about two-thirds of steel and one of wood. I understand that this will about equal one-fourth of the output of the British shipbuilding yards for the year of 1917.

In aircraft, too, we are trying to do our share. We are turning out about 350 aëroplanes per month. The total to date is about 2,500. Besides that, we are manning them.

CONTRIBUTIONS TO MANY ACTIVITIES

But it has not been all men, money, and munitions. Our people have responded gloriously to all appeals for the relief of suffering. For our Canadian Patriotic Fund, which looks after the wives, children, and dependents of our men at the front, we have already given $44,000,000. For every two dollars the government has asked from the people it has generally been given three.

To the Red Cross the contributions have been $12,000,000 in cash and $15,000,000 in supplies. Of the cash contribution, $7,000,000 were spent by the British Red Cross and the balance by the Canadian Red Cross. According to a newspaper item which I saw the other day, Canada leads all the nations of the world in Red Cross contributions per capita.

To the Belgian Relief Fund we have contributed over $1,500,000 in cash and an equal amount in supplies, while $8,000,000 more went to French, Serbian, and Polish relief funds and numerous other charitable and patriotic associations.

For military work by the Y. M. C. A. the contributions have been $4,500,000.

In addition to the donations from the public, the Dominion and Provincial governments have given $5,250,000 for charitable work through the Imperial Government. In all, the relief contributions from Canada amount to $90,000,000, or over $12 for every man, woman, and child in the Dominion.

Our educational leaders have also organized the Khaki University for educating the men at the front and fitting them for their return to civilian life, and our government has undertaken its support. This idea has now been copied in Britain, France, and I believe even in Germany. It had birth in the brain of Dr. H. M. Tory, president of the University of Alberta. Dr. Tory has entire charge of the work on the other side.

To summarize what we have done in finance. We have paid about one billion dollars for war expenditures, and have raised $750,000,000 of this amount by domestic loans. We are asked to raise another $300,000,000 during November for further expenditures, and I feel sure we will offer $500,000,000. We have given a credit of over $500,000,000 to the Imperial Government for purchase of munitions and supplies, and our banks have given a further amount for the same purposes of $200,000,000.

We have supplied 60,000,000 shells, one billion dollars' worth of munitions, and will soon deliver $200,000,000 worth more. We will, besides, this year add 500,000 tons of shipping, and are making 350 aëroplanes per month, having already completed 2,500, and in addition to all this we have contributed $90,000,000 to relief work.

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ARMED WITH BUCKET AND PASTE-BRUSH, SHE BECOMES THE OFFICIAL TOWN BILL-POSTER AND RELEASES A MAN FOR THE ARMY

When her father answered his call to the colors, this girl of Thetford, England, carried on his work as official bill-poster and town-crier for the town council

We are a practical people, and yet a sentimental strain runs through us. We have always a soft spot, and especially for those who help us or do us a good turn. Did you ever hear of the Canadian soldier who hailed from one of our Scotch settlements? In the course of an attack Sandy was rushing forward, rifle and bayonet at the charge, when suddenly he was attacked viciously by one of his smallest enemies, who was also nearest at hand. He felt that he could not do justice to the enemy in the distance unless he first disposed of the enemy in his midst. So he paused, put his rifle in the hook of his elbow, and made a vigorous home attack.

He was successful. But just as he caught his tormentor a German shell burst in front of him, in the very spot where he would have been had he not paused. Sandy held the little thing before him, and as he looked at it he said: "Weel, ma wee mon, I canna give ye the iron cross; I canna give ye the Victoria Cross, but ye hae saved ma life. I must reward ye somehow. I'll just put ye back where ye belong." And back he went.

TAKING A MAN'S PART IN THE GREAT STRUGGLE

For years before the war broke out, many of us knew of Germany's ambitions to rule the world, and feared that this struggle was coming. The question had to be settled whether Anglo-Saxon ideals of freedom and democracy were to prevail or the world was to be Germanized and ruled by the Kaiser.

When the future of humanity was at stake, we wanted to have some influence in the decision, and we were thankful that, as part of the British Empire, we were at war and privileged to take a man's part in this great world struggle, the greatest crisis that has come in the history of humanity for over a thousand years.

There was no compulsion on us. The Germans expected us to stay out, and simply could not understand our going in. At first we were influenced by patriotic and humanitarian reasons which we felt in a general way. But our boys soon came in contact with German brutality in a concrete way and our feelings became vastly deeper and more intense.

For instance, Lieutenant Holt, of Winnipeg, returned on leave of absence and brought with him as a souvenir a little doll. In one of those early days his regiment was forced back by the enemy through a Belgian village. He stopped at a small house to ask directions, and a little girl of about seven years ran out and gave him her dolly. She said, "Please take my dolly to a safe place." To please her he took it. Next day our men retook the village and he at once went to the cottage to see how the child had fared. He found her—lying across the threshold, dead—killed by a German bayonet. Lieutenant Holt brought back that dolly to a safe place in Canada, but your boys and our boys are now fighting that the whole world may be made a safe place for little mothers like that.

King's Staff-Sergeant James W. Smith, who has returned with his right arm shattered and shortened and the hand little better than a deformed claw, who was foreman in the W. C. White boiler works of Montreal and is now superintendent in a munition factory, told me personally that he had himself assisted in taking down some Canadian soldiers who had been crucified by the Germans nailing them to a barn door. Do you wonder that our Canadian boys were very demons in ferocity when next they attacked?

NO SELFISH CONTEST

It is no selfish struggle in which we are engaged. Like you of the United States, we have nothing to gain. We seek no territory, no indemnity, no advantage. But, like you, we are glad and proud to be in, and glad and proud to have been of any service.

This is the brief story of some of the things that have been done. But after all, those things belong to the past; they are written in history and are now mere records and memories. Nothing that we can now do can change them, and the future, which we have the power to change, is therefore more interesting and more important. In our outlook on the future we are now, thank God, united as Allies—Allies who are working together with heart and soul.

A VIEW OF JAFFA, THE ANCIENT PORT OF PALESTINE WHICH WAS USED AS A BASE OF OPERATIONS IN THE BRITISH ADVANCE UPON JERUSALEM

In the time of Solomon, Jaffa was the port of Jerusalem, and it was here that the cedar from Lebanon was landed for the construction of the Temple. In the middle ages the seaport figured in many of the crusades. Napoleon captured it in 1799, and now it has helped the Twentieth Century Crusaders of Britain to deliver the Holy Land from the Hun and the Turk (see also pages 325-344).

I should like again to express my admiration of the magnificent work which you of the United States are doing. If we in Canada can but keep pace with you, we shall be satisfied. We shall at least try.

My last word is a vision which I and other Canadians note with joy is already in the first stages of realization. I see the United States and the British Empire, the two great branches of the English-speaking world, going down through the centuries arm in arm, coöperating as brothers, each helping the other, each strengthening the other, and unitedly blessing the world and making it safe for democracy. The Germans have succeeded in unifying the Anglo-Saxon world.

Photograph by an Australian Aviator, from C. W. Whitehair

A VIEW OF THE HOLY CITY OF JERUSALEM FROM THE SKY

The conspicuous area in the middle of this airplane photograph is the "Place of the Temple," in the center of which is the glittering Mosque of Omar, one of the richest temples in the world. Beyond is the elevation known as the Mount of Olives, crowned by the Kaiserin Augusta Victoria Hospice, in which the German Government installed a powerful wireless outfit. The Church of the Holy Sepulchre can be distinguished near the center of the city. The Garden of Gethsemane lies between the Mosque of Omar and the Mount of Olives (see also pages 325-344).

THE HEALER OF HUMANITY'S WOUNDS

IN PEACE as in war, there is no organization more necessary for the alleviation of suffering than the American Red Cross, some of whose distinctive activities are most effectively portrayed in the exclusive photographs on pages 309-324. Now and ever the hearts of countless millions of the soldiers of every land who have survived the awful conflict of the War for Eternal Peace glow with gratitude when the Red Cross is brought to mind; their children and their children's children will remember it with the exact antithesis of the feeling inspired by thoughts of war.

Great as the Red Cross was in war, yet greater is it in peace, and its usefulness is now supreme in the months and years of restitution, rehabilitation, and reconstruction in the countries of our staunch friends, who so bravely bore the brunt of the brutal thrust which threatened the safety of the world and who held at bay the militaristic machine of the last of the Huns until the armies of democracy could gird up their loins and destroy it.

The American Red Cross needs now the support of every American more than ever before. To help in this work of relieving civilian suffering in devastated France and Belgium is the paramount privilege of every man, woman, and child in the United States. The widows, aged parents, and fatherless children of the heroes who died to stem the tide of autocratic advance require *your* assistance, through the Red Cross, in regaining their equilibrium to face the problems of the future.

AN ADOPTED SON OF AMERICA

"I like the American soldiers. They have come to protect my country. And I like especially my god-fathers," says Andre Claudel, a ten-year-old orphan who has been adopted by a number of army field clerks in France. Andre's mother died a year ago and his father was killed in the Argonne. He is a serious-minded little French boy and one of the best students in the refugee colony at Caen. Many French orphans have been adopted by American troops, and the American Red Cross administers the funds for their maintenance.

AMERICAN FUN IN A LONDON HOSPITAL

Remember the home paper you sent him? Well, here it is! A fellow must do something to while away the hours when he is convalescing—even in an American Red Cross hospital in London. And in spite of wounds received in action, these true-to-type Americans must make paper caps and "play soldier," for "men are only boys grown tall, and hearts don't change much after all."

THE RATIFICATION OF A FRANCO-AMERICAN ALLIANCE

In the garden of the American Red Cross recreation hut at Orleans a Yankee chaplain and a group of doughboys are entertaining a French visitor and in turn being entertained by him. It was the aged governor of one of the war-torn French provinces who said that "though France has long known of America's greatness, strength, and enterprise, it has remained for the American Red Cross in the war to reveal America's heart."

A BELOVED RED CROSS COOK

Here, in his robes of office, is Thomas—"King of the Cookies." Thomas is a Washingtonian and one of the most popular men in France. Needless to add, the smiling Yankees surrounding him have just partaken of his wares at one of the many American Red Cross line-of-communication canteens.

HIS FIRST TREAT ASHORE

When our troops were headed for France there was a keen rivalry among the soldiers to be the first ashore, and the American Red Cross canteen was the immediate objective; the direction is now reversed, but the objective remains the same

AMERICANS ALL! THE RED CROSS KNOWS NO DISTINCTION OF RACE, COLOR, OR CREED

Your Red Cross membership dollar serves all alike. Here the camera caught a recreation worker introducing a group to the Recreation Hut at Auteuil. There are three Spaniards, a Mexican, an Indian, and a negro; all are serving under the Stars and Stripes; all are American soldiers.

RED CROSS WORKERS AND A BRASS BAND CHEERING A TROOP TRAIN ON ITS WAY

Trainloads of American soldiers and marines pass through Issoudun, in the central part of France, every day. Simultaneously with the arrival of every troop train, the American Red Cross canteen workers appear laden with coffee and sandwiches for the boys, while the band from the camp where the canteen is located plays a good old Yankee tune.

ALL THE THRILLS OF WAR ARE NOT AT THE FRONT! A DOUGHBOY RECEIVING A RED CROSS GIFT

Nothing is withheld by the American Red Cross that can be given to supplement the efforts of the army and navy in caring for our boys—nothing that will add to their safety, comfort, and happiness. Here the workers at one of the line-of-communication canteens are passing out sandwiches in boxes to American soldiers in France.

WOUNDED BUT HAPPY IN OLD ENGLAND

While enjoying a sun bath outside one of the United States military hospitals in England, these boys have received a visit from the Care Committee of the American Red Cross, which daily distributes flowers, "smokes," and papers to the soldiers from "the States."

"CHOW TIME" MARKS A BRIGHT SPOT IN THE DAY

Care like this is proof to the Yankee soldier that the "mobilized heart and spirit of the American people" have been equal to every call—ready to respond to any emergency. In the American Military Hospital No. 1, at Neuilly, the members of the National Geographic Society are maintaining several wards where American boys are being restored to health and usefulness. Patriotic and sympathetic women of the Society's membership made and donated great numbers of afghans, quilts, convalescent jackets, pajamas, bath-robes, handkerchiefs, and other articles which have alleviated the suffering of our wounded.

YOUR RED CROSS MEMBERSHIP DOLLAR AT WORK

Wherever there are American soldiers this American Red Cross canteen scene is duplicated as a direct result of your membership dollar. At these canteens opportunity for a brief rest is provided, coffee and sandwiches are tucked under belts, and pure, filtered water is to be had from the hanging bags shown in the background of the picture.

A GOD-SPEED FROM THE RED CROSS WORKERS

When this picture was taken this army camion was headed for the front; now it is reversed. Many of our men are coming home, and the Red Cross workers might be bidding them "bon voyage," for these women are staying to help in the great work of the reconstruction of France, in which their organization is proving of so much value, and in the returning of millions of American troops to their native land.

AMERICAN RED CROSS "CRACHE": A DAY NURSERY FOR WORKERS' CHILDREN

The mothers of these little French children were needed in an army camouflage factory to paint the great quantities of burlap and canvas used to conceal guns and works at the front, so the American Red Cross established this nursery. Now there is even greater need of such service and it will continue until a readjustment has taken place and Belgium and France have been restored.

A RED CROSS "MOVIE" AUDIENCE IN FRANCE

There is no doubt in America that the Yankee soldier is individually and collectively the handsomest fighting man on earth. His lofty ideals and high standards of living have combined to place him physically and mentally on an elevated plane. The American Red Cross has an important work in providing him with "extras" of all kinds, including entertainment.

THE MUSIC CORNER IN A RED CROSS CANTEEN GIVES A TOUCH OF HOME SOCIAL LIFE

The first war-time purpose of the American Red Cross was to help win the war; the second was to save civilization while the war was going on. Now its greatest usefulness consists in minimizing the effects of the war on civilization—a purpose which merits the support of every American.

A SMILING HERO

From the day the United States entered the war up to July 1, 1918, the women of the American Red Cross made 10,786,489 hospital garments for the use of "our boys." Here is one of both—boy and garment. The boy is cheerful in spite of the load of shell fragments he is carrying in various parts of his anatomy, and the garment—maybe it's from your own Red Cross chapter.

AN OLD JEWEL IN THE PROPER SETTING

An Eyewitness's Account of the Reconquest of the Holy Land by Twentieth Century Crusaders

By Charles W. Whitehair

SINCE King David, nearly three thousand years ago, captured Jerusalem and made it his capital, it has been a coveted prize, sought not so much by the nations for its military importance as for its sacredness to three of the world's greatest religions.

For to the Jew and the Mohammedan, as well as the Christian, Jerusalem is "The Holy City." Throughout its history the wearied feet of millions of pilgrims from far-distant lands have never ceased to climb over the rocky Judean hills to pay homage and to worship within its sacred walls.

To the Jew, as the home of his forefathers, it has always been of hallowed memory in spite of the hundreds of years of his exile.

To the Christian, Jerusalem, with the surrounding country, is truly "The Holy Land," for it is the land of his Lord's birth, His ministry, His crucifixion, His resurrection. Throughout Christendom the names Jerusalem, Mount of Olives, Bethlehem, and Garden of Gethsemane are laden with meaning, even to the smallest school child.

To the Mohammedan, Jerusalem is second only to Mecca in sanctity.

Repeatedly besieged, captured, and recaptured, practically all of the great nations of history have held sway over the Holy City—the Israelites, Egyptians, Babylonians, Persians, Greeks, Assyrians, Romans, Saracens, Crusaders, and Turks—and its surrender in the past has nearly always meant the destruction of its buildings and the wholesale slaughter of the population.

BRITISH CAPTORS WITHHELD SHELLFIRE FROM THE SACRED CITY

The treatment which Jerusalem has received at the hands of her British captors stands out in strong contrast to her past history of suffering.

Realizing the importance of Jerusalem to the Christians, the Jews, and the Mohammedans, General Allenby so planned his campaign that he captured the town without firing a single shell into the ancient walled city.

However, the capture of Jerusalem is only an isolated incident in the great Palestine campaign. Operating in an inhospitable, hostile country, where not only food, clothing, and munitions had to be transported from great distances, but even water carried many weary miles to her forces fighting amid oppressive desert heat, Great Britain and her colonies, practically unaided, crushed the Turkish Empire.

To do so she sent a million men to the Holy Land and Mesopotamia, transporting them an average distance of about 3,000 miles through submarine-infested seas. And these campaigns were conducted simultaneously with the major operations of her armies in Belgium and France and the activities of other hundreds of thousands in Macedonia and East Africa!

Early in 1915 the Turkish forces, aided by the Germans, were launched against the Suez Canal—the main artery of the British Empire, connecting Australia, New Zealand, and India with the mother country. In February, a small force of the enemy reached the canal and was driven back; but in order to protect this vital waterway it became necessary for the British to launch an offensive.

This meant pushing forward over 150 miles of desert, which marked the beginning of the long, weary months of fighting on the Sinai Peninsula, known as the Desert campaign. America can little realize those awful days of suffering.

A CARAVAN OF THE BRITISH CRUSADERS SILHOUETTED AGAINST THE SKY AND DESERT SANDS OF RESCUED PALESTINE

In its Sinai Peninsula desert campaign the British army mustered tens of thousands of burden beasts, the greatest camel transport corps in the history of the world

Photograph from C. W. Whitehair

AN AUTOMOBILE HIGHWAY IN THE HOLY LAND

The going is seldom smooth for a motor car in Palestine, and the rainy season offered additional obstacles to the British in their advance upon Jerusalem. But the mud and the mountain torrents were far preferable to the suffocating dust and almost unendurable desert heat of the dry season, when the Jordan Valley advance was made.

During the summer of 1916 I visited every part of the Sinai front, and in no part of the war zone have I seen men undergo greater privations and hardships. Every gallon of water had to be carried forward in great tin boxes, called "fantasses"; and in time the British mustered the greatest camel transport the world has ever seen, running into the tens of thousands of burden beasts.

It was no easy matter to move forward the guns and keep up the lines of communication, for the wheels of the motor-cars and artillery sank deep into the soft sand. One enterprising young officer discovered that by laying chicken wire on the sand, motor-cars and guns could be moved forward.

THE GREAT BATTLE WITH DESERT THIRST

On the desert, many weary months went by. The army had not only to fight the Turk, but the heat, dust, flies, and thirst as well. And the worst hardship of all was the unquenchable thirst. Only those who have gone into the desert really know this awful, unbearable, ever-gripping, burning thirst.

The desert thirst has no equal. The sizzling hot sun on the sand, the glaring light, and the burning heat get into the blood, and the victim begins to want water. If he is fortunate enough to have the water, he drinks, but his thirst remains unsatisfied; and then, after he drinks, he begins to perspire and his throat becomes dry and parched and his body becomes a roaring furnace, while his clothes are soaked with perspiration. He can literally drink gallons. But the lads who went over the scorching sands of Sinai had only one gallon of water a day per man—one gallon for cooking, washing, and drinking.

Photograph from C. W. Whitehair

THE WILDERNESS OF JUDEA FROM THE HEADQUARTERS OF THE DESERT MOUNTED CORPS OF THE BRITISH FORCES

The British army in Palestine had not only to fight the Turk, but the heat, dust, flies, and thirst—that awful, gripping, burning, unquenchable desert thirst

Photograph from C. W. Whitehair

GENERAL VON FALKENHAYN AND DJEMAL PASHA LEAVING THE MOSQUE OF OMAR IN JERUSALEM

This is one of the numerous official Turkish photographs which fell into the hands of the British following their successful "Palestine push." There is no more formidable fighting man in the world than the Turk, and Germany sent some of her ablest officers to the Near East to organize and direct the operations of the Ottoman troops against the British; but the triumph of General Allenby's men was complete.

In the entire campaign, every gallon of water had to be brought from the River Nile by means of pipes. The water was stored in great reservoirs prior to being filtered for the troops.

It was not only necessary to bring the Nile water hundreds of miles for the army, but in many instances water had to be furnished to the captured civilian population along the line of march, due to the fact that the Turks destroyed the wells as they retreated.

But, in spite of heat, thirst, the difficulties of transport, and the combined Turkish and German resistance, the British forces moved slowly forward until they reached the strong enemy line stretching from Gaza to Beersheba. It was at this juncture in the operations that General Allenby, in June, 1917, came out from France, took over the command, and began the "Palestine push."

The success of the whole campaign very largely centered around the railroad, which was constructed mile by mile as the army moved forward. Much of it had to be built under constant fear of aërial bombardment. But probably no railroad has carried as large an amount of freight in the same length of time, for all the food, munitions, guns, and men for Palestine are moved over the one track.

THE GIFT OF THE LAST CRUSADERS

Before the war, in going to Jerusalem it was necessary to proceed by boat from Port Said to Jaffa, thence by rail to Jerusalem, for the trip across the sands of Sanai took about eight days by camel. Today the traveler can go to bed on a

Photograph by American Colony, from C. W. Whitehair

CELEBRATING AMERICAN INDEPENDENCE DAY IN JERUSALEM UNDER THE AUSPICES OF BRITISH COMMANDERS

The officer in the foreground to the right of the flag-bearer is

comfortable train at the canal base camp, Kantara, and arrive early the next morning in Jerusalem.

This quick and comfortable trip has been made possible by the last Crusaders, many of whom sleep beneath the lonely crosses that mark the road from the Suez Canal to the gates of the Holy City.

On December 5 the British forces had fought forward to a line from Neby Samwil to a position opposite Ain Karim, a distance of just under five miles.

Neby Samwil is 2,935 feet above sea-level and quite the highest point in the vicinity of Jerusalem. It is about four and a half miles from the north wall of the city. Ain Karim, the traditional birthplace of John the Baptist, is about four miles slightly to the southwest of Jerusalem.

HOW THE ATTACK WAS LAUNCHED

The actual attack on Jerusalem was begun on the morning of December 8. Unfortunately, on December 7 it had begun to rain, and there was a deluge for three days, as it was the rainy season. Mist and fog hung over the hills and made aëroplane observation practically impossible.

The rain also made the roads almost impassable for mechanical transport and the camels were useless. The troops had been moved up in the same clothing they had worn in the desert campaign—khaki drill and shorts—and the men suffered severely from the intense cold.

The general who commanded the 60th division told me that on the night of December 7 he had brought up from Jaffa all the oranges he could get, and then went among the troops and threw the fruit on the ground and made the men scramble for it as they would in a football game, to get them warmed up.

The only food the troops had was bully beef and biscuits. But in spite of cold, rain, and rough food, they were all exceedingly keen to go forward. Every soldier, that cold, rainy December night, seemed to be inspired with the spirit of the old Crusaders, as he went forward, singing, to the attack.

About midnight the British forces reached the position of deployment and the attack began. By dawn they had captured all of their first objectives. It is impossible to speak of this attack as a charge, because, as I went over all the ground, I found it was quite difficult even to crawl up the side of the hill.

Their last objective lay quite a little way out of the city. It was an old factory on top of the hill, in which there had been installed a large number of machine guns, which swept the slopes.

At 8 o'clock on the morning of December 8, the British left the Turkish trenches they had captured and made for the factory. The only cover was the big rocks on the hillside, and they went forward in the style of the old Indian fighter. At 4 o'clock that afternoon they made a final rush and seized the crest. At 5 o'clock the assailants were in possession, and this practically meant the capture of Jerusalen, as there were no more commanding heights to which the Turks could retire.

THE SURRENDER OF THE CITY

On the morning of December 9, Privates H. E. Church and R. W. J. Andrew, of the 220th London Regiment, sighted a white flag outside of Jerusalem. The news was immediately wired back to Major General Shea, who at once wired General Allenby.

General Allenby telegraphed: "Go forward at once and receive the surrender of the city in my name."

General Shea immediately went forward and from the acting mayor and chief of police he received the surrender of Jerusalem. Of course, it was received outside the city wall.

At noon on December 11 General Allenby made his official entry into Jerusalem through the small, narrow Jaffa Gate, on foot, in his ordinary active service uniform, without even the display of military medals.

What a contrast to the entry of the Kaiser, when he made his pilgrimage to Jerusalem in 1898! His agents had the Turks tear down a part of the city walls near the Jaffa Gate so that he could advance through a passage made solely for himself, and on horseback he entered, with all the pomp and glory and display of wealth that the Teutonic mind could conceive.

Photograph from C. W. Whitehair

A CAMEL RACE, ONE OF THE EVENTS OF A Y. M. C. A. ATHLETIC MEET ARRANGED FOR THE ENTERTAINMENT OF THE BRITISH TOMMIES WHO CAPTURED JERUSALEM

That ostentatious entry twenty years ago was looked upon at the time as the action of an egotistical monarch, but now we have come to realize that it was part of a plan to win the Moslem world to Germany. This breach in the wall made possible the entry of carriages into the town, and these have taken away some of the charm of the Holy City; but the vehicles can penetrate only a few hundred feet, as the streets are exceedingly narrow.

However, the world can be truly thankful that henceforth no such desecration of the sacred city will take place. The British, I understand, are planning to repair the breach in the wall, thus restoring all the traditional simplicity of the ancient city.

KAISERISM ON THE MOUNT OF OLIVES

The Kaiser caused to be erected on the beautiful Mount of Olives, overlooking Jerusalem and all the surrounding country, a great stone building altogether out of keeping with the ancient architecture of the city. They called it the Kaiserin Augusta Victoria Hospice, which even then was spoken of as looking more like a fortress than a hospice.

It is a tremendous building, supposed to be for the use of German pilgrims, but it was afterward discovered that it contained a powerful wireless outfit, which, I presume the exponents of German Kultur would explain, was a real aid to the German pilgrims' prayers and meditations.

Later, it was claimed that the foundations of the walls were beginning to give way, thus affording an excuse for building great concrete bases to hold them in place. These bases had a strange resemblance to the ordinary German gun emplacements—a little more German Kultur!

Today, standing at all gates and before all the places sacred to Christianity and Judaism, are British Tommies, protecting them against desecration and spoliation at the hand of war. British Indians, being Mohammedans, guard the Mohammedan sacred places.

Since the capture of the city not a single building has been torn down or damaged, and no changes of any kind are permitted without the sanction of the military authorities. Every single stone is being guarded, so that the city may be preserved unmarred by modern hands.

Upon his entry, General Allenby at once announced to the inhabitants that they would receive just treatment, that no preference was to be shown, and that the people were to carry on their business as they would in times of peace.

Photograph from C. W. Whitehair

LADY ALLENBY GIVING AWAY THE PRIZES AT A Y. M. C. A. ATHLETIC MEET: PALESTINE

While the Y. M. C. A. has been chiefly instrumental in providing entertainment and diversion for the Twentieth Century Crusaders in the Holy Land, it has also helped the British authorities in solving some of the vital sanitary problems of Jerusalem. It was this organization which secured engine, pump, carts, and wagons for the first sanitary equipment installed in the city.

The first British military governor of Jerusalem was the Postmaster-General of Egypt, Borden Pasha; but he had to resign because of illness, and Colonel Ronald Storrs assumed the title and duties of Governor of Jerusalem on December 27. When he arrived he found that the city was on the verge of famine, and immediate action had to be taken to avert it.

SAVING THE CITY FROM STARVATION

Jerusalem in the past had two main sources of food supply—the first from the sea by Jaffa, which was cut off at the outbreak of the war; the second from the districts east of the Jordan. The latter was interrupted by the Turks when the British captured the city.

No supplies were coming in from the surrounding country, as in December the roads are very bad, and because nearly four years of Turkish military occupation had stripped the country of all available food resources.

An order was issued requiring the declaration of all grain in the city, for nearly 25,000 people were absolutely destitute and the number was increasing daily. Hundreds of tons of supplies were shipped in and relief work was carefully carried forward under the personal supervision of the Governor and his staff.

The Turks on evacuating Jerusalem took special care to deport all persons occupying important civil offices, such as heads of communities, magistrates, chief accountants, the chief of the police, and other prominent citizens. They had closed all schools, disbanded the police force, and destroyed or carried away every important document or register

(No. 27.)

IMPORTANT NOTICE.

All correspondence must be written in one of the following languages and in the characters indicated:—

English.

French.

Italian.

Hebrew (Hebrew character).

Arabic.

Yiddish (Latin or Hebrew character).

Spanish-Hebrew (old Hebrew character).

Russian.

Armenian.

Greek.

Spanish.

Portuguese.

Dutch.

Amharic.

German (Latin or German character).

All other correspondence will be destroyed.

R Storrs

Military Governor.

JERUSALEM IS THE MODERN BABEL

Fifteen languages ought to be enough for any community, but the last line of this official proclamation, issued in the Holy City after the British occupation, is no joke. There are lots of other tongues spoken in the capital of Palestine in addition to the ones catalogued. These, however, are the principal languages to be heard in the streets and observed on the signboards.

connected with the administration. There were no records left; not even title deeds of private property. Private and public institutions had been pillaged.

No medical attention was to be had anywhere in the city, but within 24 hours after the British occupation two hospitals were opened for the civilian population.

The Governor and his staff personally went to every bakery during the first few days, to see that the women and children got bread and were not crowded away by the men. Nine hundred tons of cereals are now brought to Jerusalem every month, and every precaution is taken to see that the city has sufficient food.

The problem of government was far more complicated than appears on the surface, for in Jerusalem more languages are spoken than in any other city in the world—a fact indicated by one of the official notices reproduced on this page.

Fortunately, the Military Governor is splendidly fitted for his task, for he knows the Near East, having been during the past few years in the Egyptian Government service. He knows the oriental mind, and realizes how impossible it is to deal with orientals, without knowing something about their religion and their mode of living and thinking. He is able to speak fluently Arabic, French, Italian, Greek, English, German, and Turkish and is now mastering Hebrew.

During his services in Egypt, Colonel Storrs became very popular with the Moslems—a fact which gave him a good standing in Jerusalem, as the majority

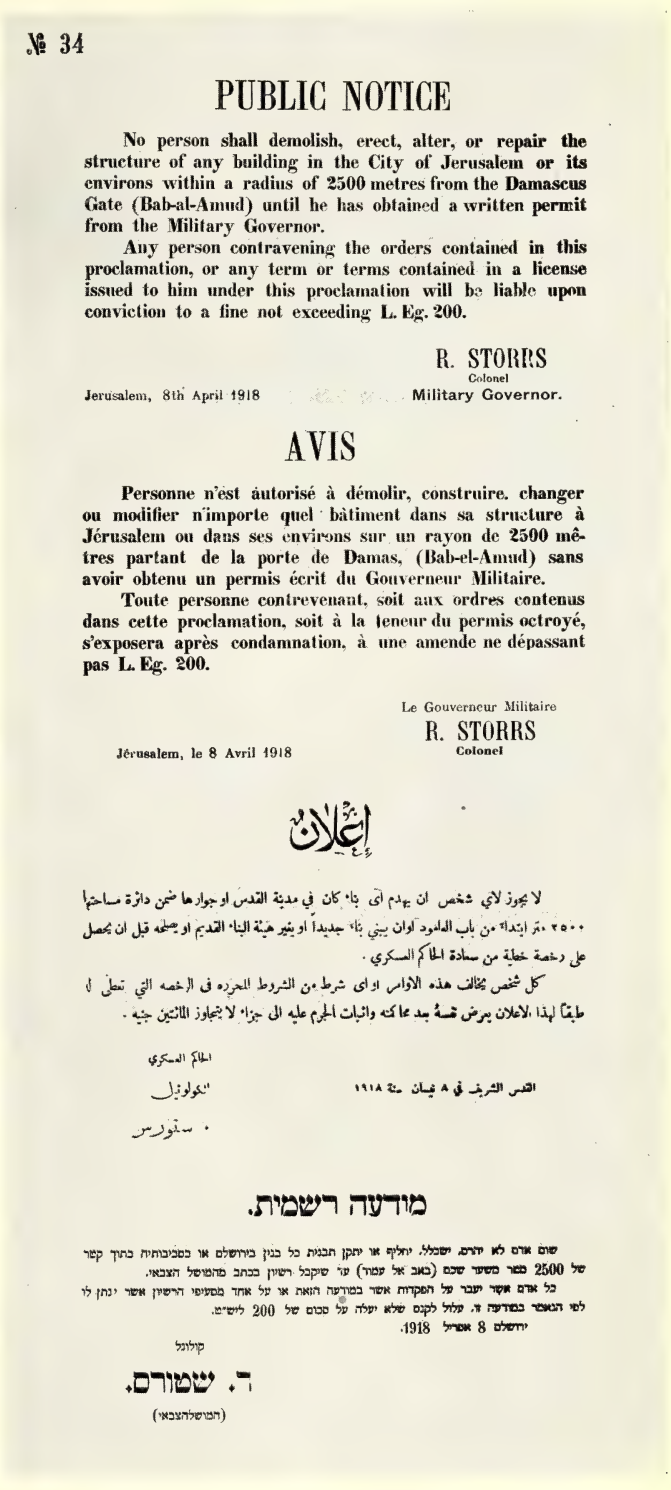
of the population in Palestine are Moslem.

Since the different religious communities in Jerusalem have been quarreling for years, it was not to be expected that they would lay aside their differences the moment the city was taken over by the British. The Governor laughingly told me that he felt that he was dealing with the population in a just way as long as they all kept complaining.

For example, in the morning a deputation of Greek priests would call to protest that the authorities were according special privileges to the Jews or the Moslems; a little later would come a deputation of Latin priests registering a similar complaint against the others; and following them, the Moslem leaders would make their complaints. After these the Jewish rabbis might come to voice their troubles.

The Governor put it aptly when he said that if part of the community quit complaining, he had made up his mind it would be time to change his program, as the satisfied citizens were possibly being shown too much consideration.

In the large public square in the outer city a British military band gives a concert four times a week. At first the band played only three afternoons a week—Thursday, Saturday, and Sunday—but the Grand Mufti, the head of the Moslems, complained, saying: "You are playing for the Jews on Saturday and for the Christians on Sunday, but you don't play for the Mohammedans on Friday." The band now plays on Friday.



№ 34

PUBLIC NOTICE

No person shall demolish, erect, alter, or repair the structure of any building in the City of Jerusalem or its environs within a radius of 2500 metres from the Damascus Gate (Bab-al-Amud) until he has obtained a written permit from the Military Governor.

Any person contravening the orders contained in this proclamation, or any term or terms contained in a license issued to him under this proclamation will be liable upon conviction to a fine not exceeding L. Eg. 200.

R. STORRS
Colonel
Military Governor.

Jerusalem, 8th April 1918

AVIS

Personne n'est autorisé à démolir, construire, changer ou modifier n'importe quel bâtiment dans sa structure à Jérusalem ou dans ses environs sur un rayon de 2500 mêtres partant de la porte de Damas, (Bab-el-Amud) sans avoir obtenu un permis écrit du Gouverneur Militaire.

Toute personne contrevenant, soit aux ordres contenus dans cette proclamation, soit à la teneur du permis octroyé, s'exposera après condamnation, à une amende ne dépassant pas L. Eg. 200.

Le Gouverneur Militaire
R. STORRS
Colonel

Jérusalem, le 8 Avril 1918

إعلان

لا يجوز لاي شخص ان يهدم اى بناء كان في مدينة القدس او جوارها ضمن دائرة مساحتها ٢٥٠٠ متر ابتداء من باب العامود اوان يبني بناء جديداً او يغير هيئة البناء القديم او يصلحه قبل ان يحصل على رخصة خطية من سعادة الحاكم العسكري .

كل شخص يخالف هذه الاوامر او اى شرط من الشروط المحرره فى الرخصه التي تعطى له طبقاً لهذا الاعلان يعرض نفسهُ بعد محاكمه واثبات الجرم عليه الى جزاء لا يتجاوز المائتين جنيه .

القدس الشريف في ٨ نيسان سنة ١٩١٨

الحاكم العسكري
بكولونيل
• ستورس

מודעה רשמית.

שום אדם לא יהרוס, ישכלל, יחלוף או יתקן חבנית כל בנין בירושלם או בסביבותיה בתוך קשר של 2500 מטר משער שכם (באב אל עמוד) עד שיקבל רשיון בכתב מהמושל הצבאי.

כל אדם אשר יעבר על התקנות אשר במודעה הזאת או על אחד מהסעיפי הרשיון אשר ינתן לו לפי הנאמר במודעה זו, יהלל לקנס שלא יעלה על סכום של 200 לישי"ט.

ירושלם 8 אפריל 1918.

קולונל

ה. שטורס.

(המושלהצבאי)

Photograph from C. W. Whitehair

ONE OF THE FOUR-LANGUAGE PROCLAMATIONS POSTED IN JERUSALEM BY THE BRITISH

BRITISH HORSES TETHERED AT THE FOOT OF THE MOUNT OF OLIVES: THE KAISERIN AUGUSTA VICTORIA HOSPICE CROWNS THE HEIGHT (SEE TEXT, PAGE 332)

Photographs from C. W. Whitehair

BRITISH OBSERVATION POST IN THE INDIAN HILLS ON THE DAMASCUS ROAD

The rapidity with which the British troops completed the conquest of Palestine and Syria during the closing weeks of the world war constituted one of the most brilliant strategic campaigns of history. Much of the success of the great "push" was due to the excellence of the observers both on the ground and in the air.

A RESERVOIR BETWEEN THE PONTIUS PILATE TANK AND JERUSALEM

The capacity of this basin is 350,000 gallons. The tank begun by Pontius Pilate was not completed in ancient times because the Roman Government frowned upon the heavy cost of the proposed water system. The British, however, immediately following their occupation of the Holy City, began the restoration and completion of the tank, which has a capacity of 5,000,000 gallons and is fed by a perennial spring.

Photographs from C. W. Whitehair

COURTYARD OF THE COPT INN: JERUSALEM

This inn marks the northern boundary of the Patriarch's Pool, an artificial reservoir which is said to have been constructed by King Hezekiah

© International Film Service

FRENCH PILGRIMS CARRYING A HUGE CROSS INTO THE CHURCH OF THE HOLY SEPULCHRE

This edifice is one of the most sacred shrines in all Christendom. Every year in times of peace thousands of Americans join in the pilgrimage of peoples who wend their ceaseless way to this historic spot.

© International Film Service

THE ANCIENT CEREMONY OF "WASHING THE FEET" BY THE GREEK PATRIARCH ON THURSDAY BEFORE EASTER IN FRONT OF THE CHURCH OF THE HOLY SEPULCHRE: JERUSALEM

This particular scene was enacted in the Holy City some time prior to the rescue of Palestine by the British. Note the preponderance of the Turkish fez in the crowd of onlookers.

Photograph by Earle Harrison

THE NORTHEAST CORNER OF THE TEMPLE INCLOSURE: JERUSALEM

"The most beautiful place in all Jerusalem is Haram-esh-Sherif, 'the Place of the Temple.' This area, which is surrounded by a wall, is the site of Solomon's magnificent Temple. It was a sacred spot even before King David placed his altar there." The native at the left of the picture is standing above what were once King Solomon's stables.

A public reading room has been opened in the public garden, in which the daily news telegrams are posted in English, French, Arabic, and Hebrew, and newspapers in various languages are provided.

Football teams have been organized among the boys of the city, under a special coach selected by the military. Public entertainments of all sorts are provided, and great care is taken to see that the heads of all the different religious communities are invited.

Without question, the greatest achievement of the British régime has been the bringing of water to the city. Before the British occupation the only water in Jerusalem was that which was collected during the rainy season in the dirty cisterns throughout the city and that which was peddled in goatskin water-bags on the backs of men and donkeys.

The reservoirs or cisterns are from twenty to thirty feet square and are so constructed that the water from the buildings and streets flows into them during the rainy season. As sanitation in the past has been unknown in the city, the condition of these cisterns can be imagined, for no precaution was taken to prevent the filth and dirt of the streets from flowing in with the water.

Water has always been the most precious thing in Palestine, and particularly in Jerusalem. Although the Turks ruled the city for more than four hundred years, they had never provided an adequate water supply. Within five months after the arrival of the British 320,000 gallons of water were being piped into the city daily.

About 15 miles from Jerusalem, out beyond Bethlehem, on the Hebron road, was a great tank begun by Pontius Pilate to supply water to the city. We are told that the expense was so great that when the Roman Government learned of it the work was stopped at once and was never completed. The tank and an aqueduct from an ever-flowing spring to the tank have been restored, and the water is now brought to Jerusalem through a six-inch pipe. The tank holds about 5,000,000 gallons, and insures a steady supply.

PLANNING FOR THE CITY'S FUTURE

Realizing that under a just and honest administration Jerusalem is likely to have a large increase in population, a general plan has been drawn up for the immediate future. This plan provides for modern extensions beyond the walled area and contemplates a more practical style of architecture, which will, however, harmonize with the buildings of the ancient city.

As an old jewel must be properly set, so as to bring out all its luster, so will old Jerusalem stand out on the top of the hill, unspoiled by modern hand, towering alone in all her ancient beauty.

Much of the oriental charm of the old city is due to the dark, narrow, winding streets, resounding with the babble of many tongues and teeming with endless streams of people gathered out of every nation under heaven.

Many of the streets are ill paved and end in blind alleys. A number of them run under and through buildings and are lighted by oil lamps. No ray of sunshine or fresh air penetrates these dark passageways.

Often it is necessary to crouch against the wall to let the camels and donkeys, in charge of their yelling Moslem drivers, get by. One who has made the trip from Jaffa to Jerusalem at night by motor-car can never forget the sights and sounds of the almost endless train of grumbling, groaning camels, with donkeys occasionally interspersed, all loaded with vegetables and fruit, creeping up to Jerusalem for the morning market.

PILGRIMS FROM ALL LANDS

In Jerusalem we see the pilgrims from all countries, who have come to end their days in the sacred city. Jews are seen by the thousands, in their long, thin robes, which look like dusters, all with wide-brimmed hats, much like those worn by the Quakers in their early days in America.

Mingling with the crowds are Greek, Latin, and Armenian priests in bare feet or wearing sandals, and here and there are the sisters from the numberless convents. The Moslem women go hurrying through the streets, with faces completely hidden by long veils. Armenians, Arabs, and Europeans are all rubbing shoulders in the little winding streets.

As I went about the city the variety of putrid smells and the dirty, begging pop-

ulation detracted much from the charm of the scene and made it difficult to realize that this to millions of people is the most sacred spot in all the world.

The Church of the Holy Sepulchre is a very interesting place, being remarkable for the number of supposedly historic spots in so small an area. Not far from the reputed sepulchre is the Stone of Atonement, where the body of Christ is said to have been prepared for burial. A few feet away is a hole in which the cross is said to have been placed, with two holes beside it for the crosses of the two thieves crucified at the same time, and in another room a star is inlaid in the floor to mark the burial place of Adam.

Millions of people journey to Jerusalem to see these sacred places. An American tourist once remarked that this church is like an American department store—everything under one roof.

The most beautiful place in all Jerusalem is Haram-esh-Sherif, "the Place of the Temple." This area, which is surrounded by a wall, is the site of Solomon's magnificent temple. It was a sacred spot even before King David placed his altar there.

In the center is the glittering Mosque of Omar, one of the richest in the world. It is built over a great rock, the Holy Rock, beneath which, according to the Moslems, is "The Well of Souls," where the spirits of all the Moslem dead assemble twice a week to pray. Mohammed himself once declared that one prayer here is worth a thousand elsewhere.

The rock is 59 feet long and 44 feet wide. Upon it the old Israelites made their burnt offerings, and in the middle ages the Crusaders erected an altar. On this rock Abraham is supposed to have built the altar on which to sacrifice his son Isaac. Beneath it is a small cavern about 15 feet square, in which some people believe that Masonry was first instituted by King Solomon.

Shortly after the capture of Jerusalem a group of New Zealand Masons, by liberal gratuities to the sheik in charge of the mosque, secured permission to enter this mystical chamber, and there 32 of them, representing 27 different lodges, held a Masonic meeting. The old sheik acted as door-keeper and protected the meeting from intruders. Throughout the world of Masonry in modern times, no other worshipful master has opened his lodge in quite such historic surroundings.

Jericho has nearly disappeared from the map; today it is a little village of only a few dirty, dismal hovels, not worthy of being called houses, in which live some three hundred wretched creatures.

However, from the little village, at the break of day, there is unfolded to the eye of the traveler one of the most remarkable historic panoramas in all the world. Across the Jordan to the east the sun shoots its rays over the heights of Moab. It was from one of those lofty mountains that Moses, after forty years of wandering and waiting, gazed longingly upon the Land of Promise, which he was destined never to enter.

To the south, between the mountains of Moab and the Judean Hills, nestles the Dead Sea, upon whose sluggish waters there now floats the smallest fighting squadron of the great British navy.

To the northwest lies the Mountain of Temptation, where Christ is reputed to have spent His forty days and nights of fasting.

To the west, silhouetted against the sky-line, looms the tower of the German hospice upon the Mount of Olives.

IS THE JEW'S DREAM TO BE REALIZED?

One of the spots best known to tourists in Jerusalem is "The Wailing Place of the Jews," a portion of the old wall erected by David, where for hundreds of years countless thousands have gathered to pray for the restoration of their kingdom. At last it looks as if their dream would become a reality. Mr. Arthur James Balfour, Great Britain's Secretary of State for Foreign Affairs, has written as follows on this subject:

"His Majesty's Government view with favor the establishment in Palestine of a national home for the Jewish people, and will use their best endeavors to facilitate the achievement of this object, it being clearly understood that nothing shall be done which shall prejudice the civil and religious rights of existing non-Jewish communities in Palestine or the rights and political status enjoyed by Jews in any other country."

A part of this plan was the establishment of a great Hebrew university, and

Photograph from C. W. Whitehair

THE WAILING PLACE OF THE JEWS: JERUSALEM

"May the kingdom soon return to Zion! Comfort those who mourn over Jerusalem. May peace and joy abide with Zion, and the Branch of Jesse spring up at Jerusalem." Thus runs the litany of the Jews, which for centuries has been recited in this place. Today the never-ending prayers of an exiled people are about to be answered.

I was fortunate to be in Jerusalem at the time of the laying of the corner-stone of this institution. The day marked the dawn of a new epoch in the history of the Jewish people.

The site of the university is on Mount Scopus, across the Kidron River from the city and north of the Mount of Olives. On the day of the ceremony the crowds began leaving the gates of the city in the early afternoon. Most of them were walking because they were too poor to ride. Besides, when the Turks left Jerusalem they swept the city clean of carriages, wagons, and horses.

But one forgot the poverty of the multitude when he caught their spirit, for over them hung an atmosphere of hope and expectancy. They were happy, and well they might be, for a new day was beginning for all of them, and surely no race has suffered longer or more intensely than the Jews.

With heads high the multitudes sang their hosannas and hallelujahs. The laying of the corner-stone was marked by simplicity and dignity. The actual building of the university will be delayed until after the close of the war.

It now looks as if, after nearly two thousand years of exile, the Jews will return to claim a home in the land of their forefathers. Even under the unjust Turkish rule, the Zionists had established 45 or 50 settlements, and any one who doubts their ability to colonize has only to visit some of these villages.

The houses are better built than those of the ordinary Palestine village. The streets are clean and the farms are most creditable. The colonists have greatly increased the annual harvest of the acres they cultivate, and have demonstrated that Palestine has large agricultural possibilities.

The territory of Palestine is about one-

sixth the size of England, and before the war had a population that has been estimated at about seven hundred thousand.

Due to the unjust Turkish rule of the past four hundred years, the population is in a wretched condition. Four years of war have devastated the land beyond belief.

Under a capable government, it is believed that Palestine can support a population running into the millions, but large sections of the country are now almost completely depopulated.

THE TORTURES OF WARFARE IN THE JORDAN VALLEY

The Jordan Valley today lies practically uncultivated. In earlier periods the valley was well tilled and produced large crops. With a proper system of irrigation, no part of Palestine would yield more bountiful harvests, for the soil is fertile and the climate is subtropical.

At the same time, there is no part of Palestine where the British troops have suffered more severely than in the Jordan Valley. During the summer the dust and heat are terrific. The thermometer goes booming up toward 120° to 130° F., while the dust is suffocating, in many places being over a foot deep, not alone on the road, but over the valley. It is as fine and foamy as the finest wheat flour, and rises in great clouds as the motor plows through. So completely does it hover over the car as it is stirred up, that time after time the occupant of the back seat cannot see the windshield. The motor drivers are often forced to stop to find their way, as the blinding, baffling clouds roll about them.

BRITISH FOUGHT FOR ALL CHRISTIANITY

Just how the problem of government will be worked out is a question for the Allies to settle; for, of course, the country will need to be so handled that Jerusalem will be kept not for the Jews only, but for all peoples.

It is wrong to speak of Palestine as the national home of the Jews alone, for the native Christian can make the same claim.

It seems that General Allenby has taken a very sane view of the problems involved. He insists that he is not commanding a British army, but is in command of a detachment of the Allies, and so strongly does he feel this that I was prompted to say: "You must realize that in all your force in Palestine there are possibly only a few hundred French and Italian troops, and in all of your fighting here in Palestine, so far as I can learn, there has not been one single soldier who has given up his life who was not a Britisher."

He replied: "Possibly that is true, but you must remember that while all of the men under me have been British soldiers, yet that is merely an incident; for the men who were fighting here might have been used on the Western Front. The other Allies have used their men there, and this is as much a part of the Allied show as is France, and I am carrying forward the campaign on the basis that the future of Palestine should be left to the Allies to settle, the same as in other conquered territory. However, I am, of course, trying so to administer the country that it can be handed over in the best possible condition to whomsoever it is entrusted after the war."

As I went from one part of Palestine to the other, and rubbed shoulders with the Indians, the Australians, the New Zealanders, the Scottish, and English troops, and talked with these men and their commanding officers, I came to see the secret underlying the success of the Palestine campaign. This success is evolved from the dynamic personality of one of the greatest military leaders of the war, General Edmund Henry Hyman Allenby.

He has inspired confidence and trust in every man of his command. From his highest general down to his most humble private, there is a reliance in his leadership which knows and looks only for success.

The recent capture of Damascus stands out as one of the brilliant military achievements of the war. In spite of the mountainous country between Jerusalem and Damascus, the British forces were moved forward so rapidly and with such strategic skill that practically the entire Turkish army opposing them was captured.

Palestine today is beginning a new chapter of her history, which is entirely due to the courageous and wise administration of her British liberators.

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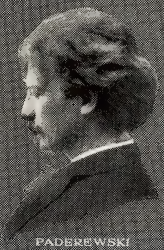
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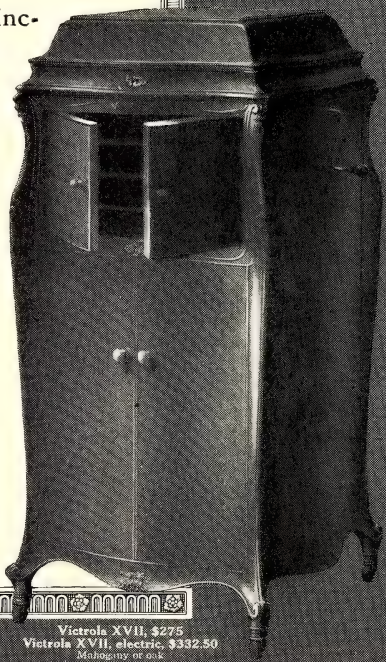

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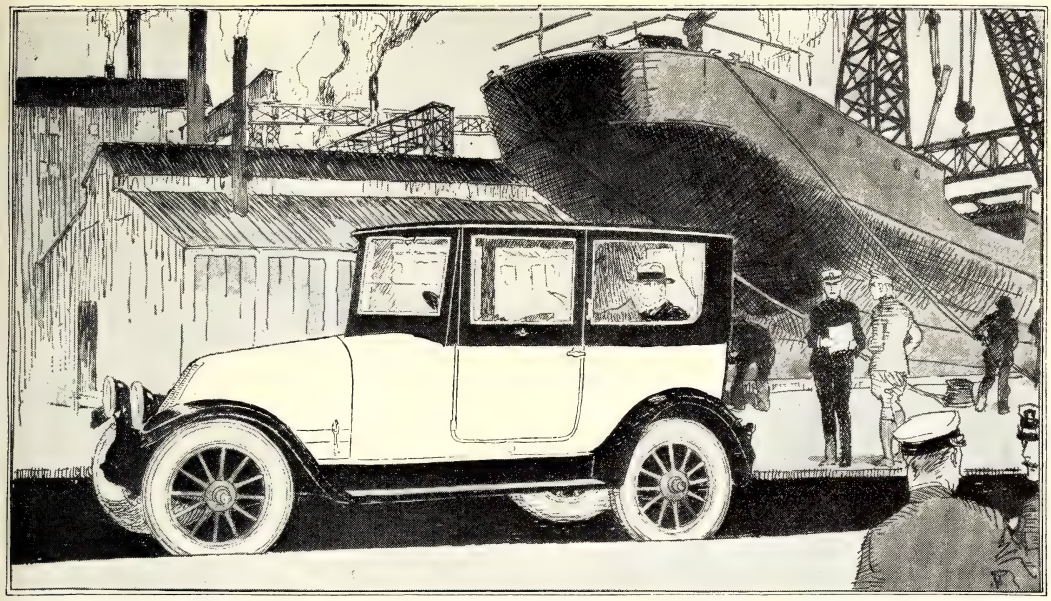

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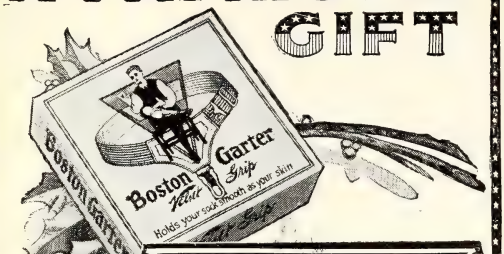

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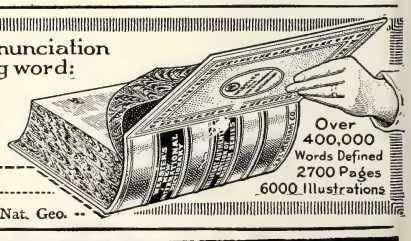

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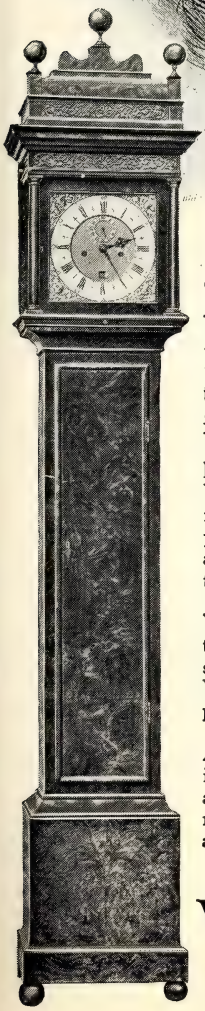

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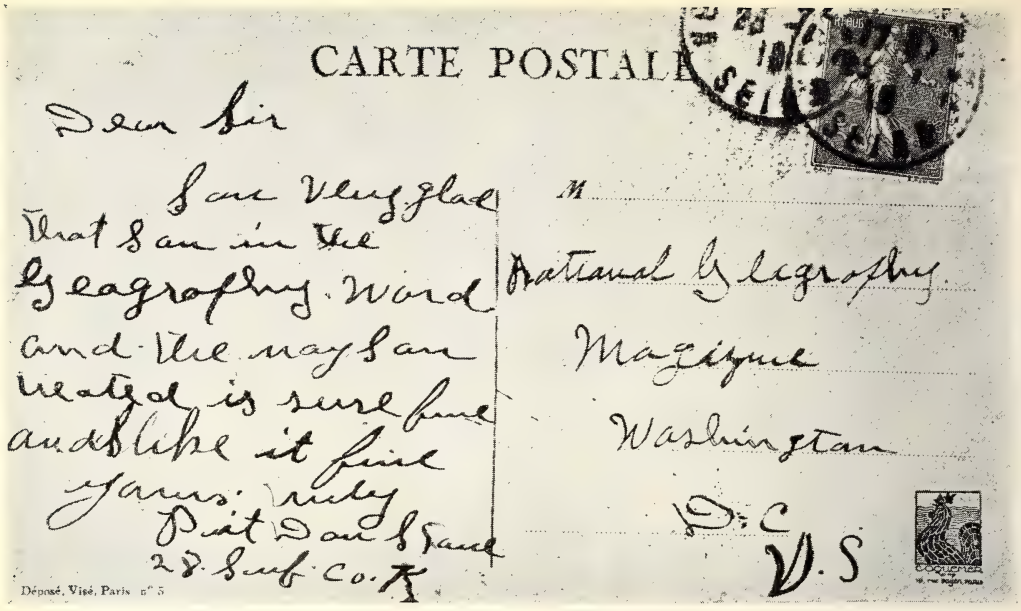
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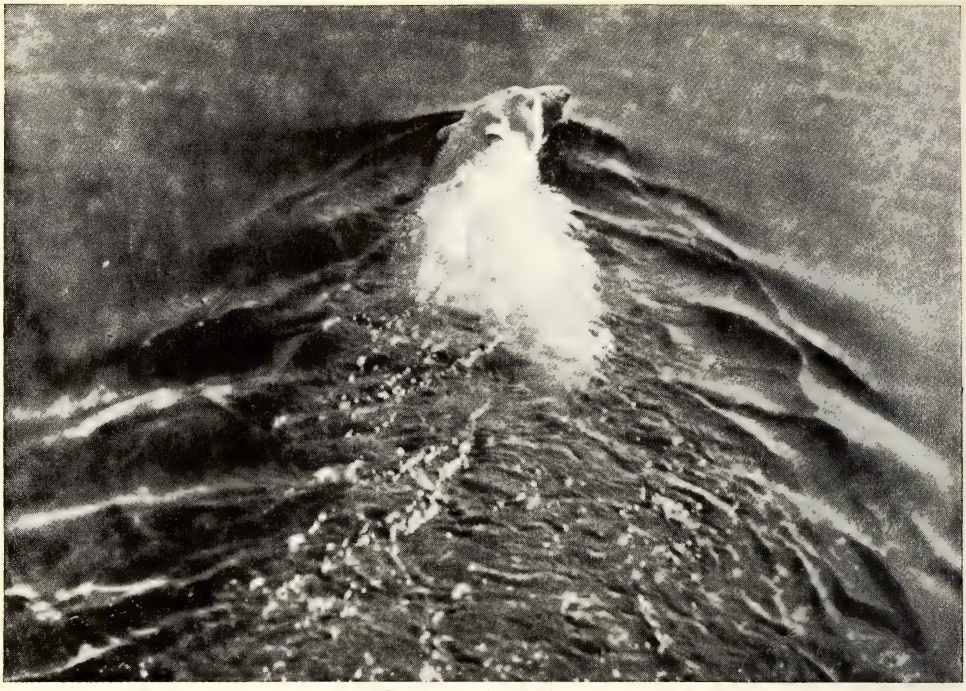

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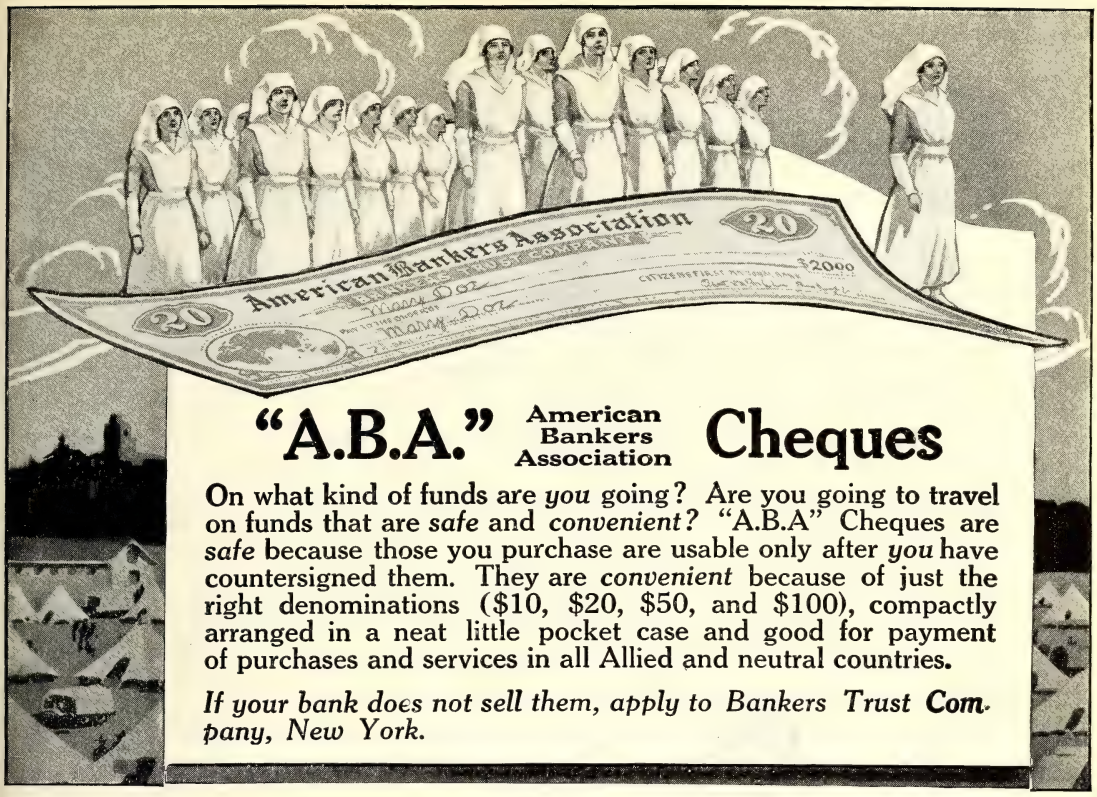

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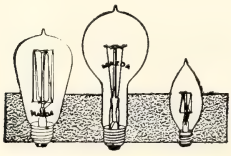

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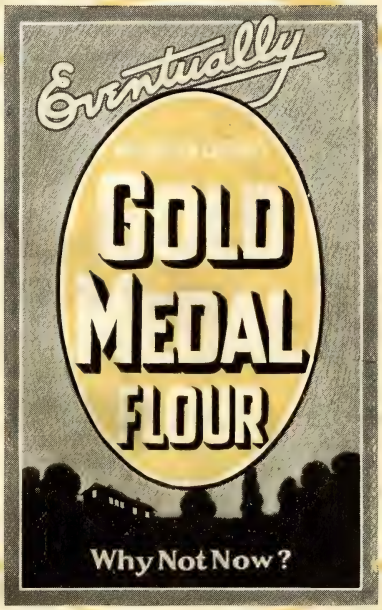

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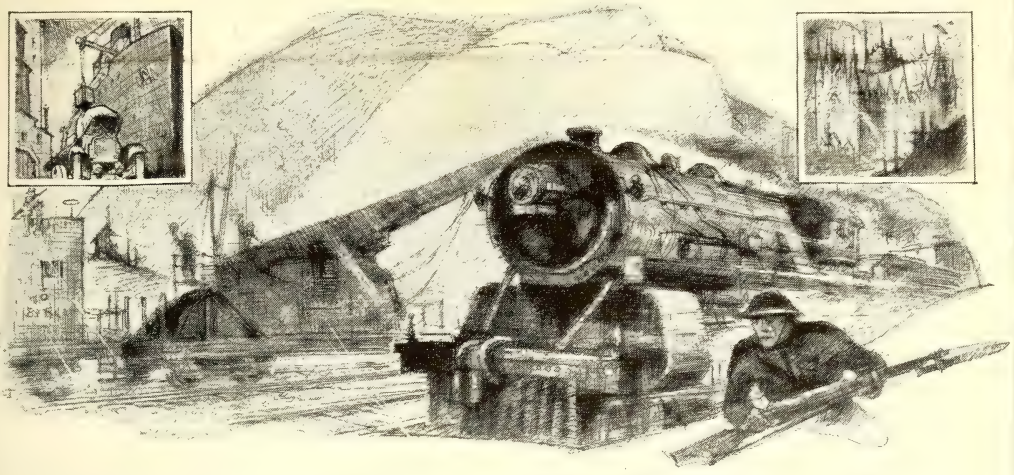

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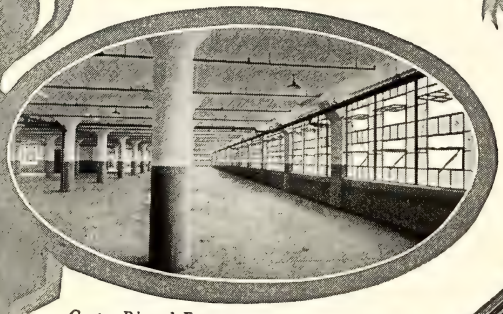

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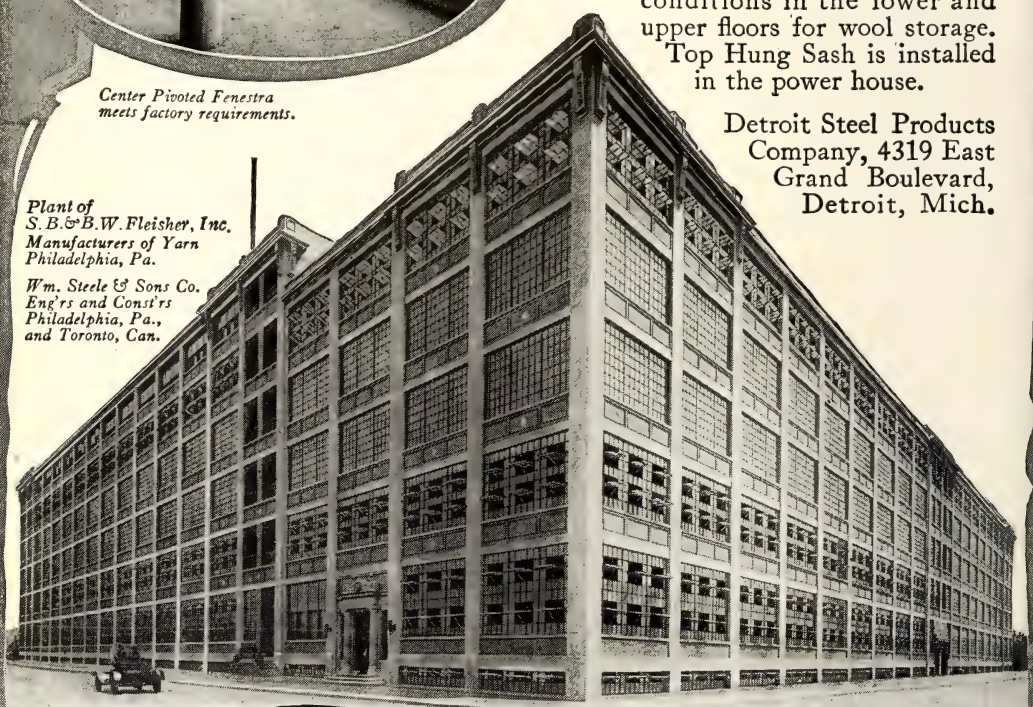

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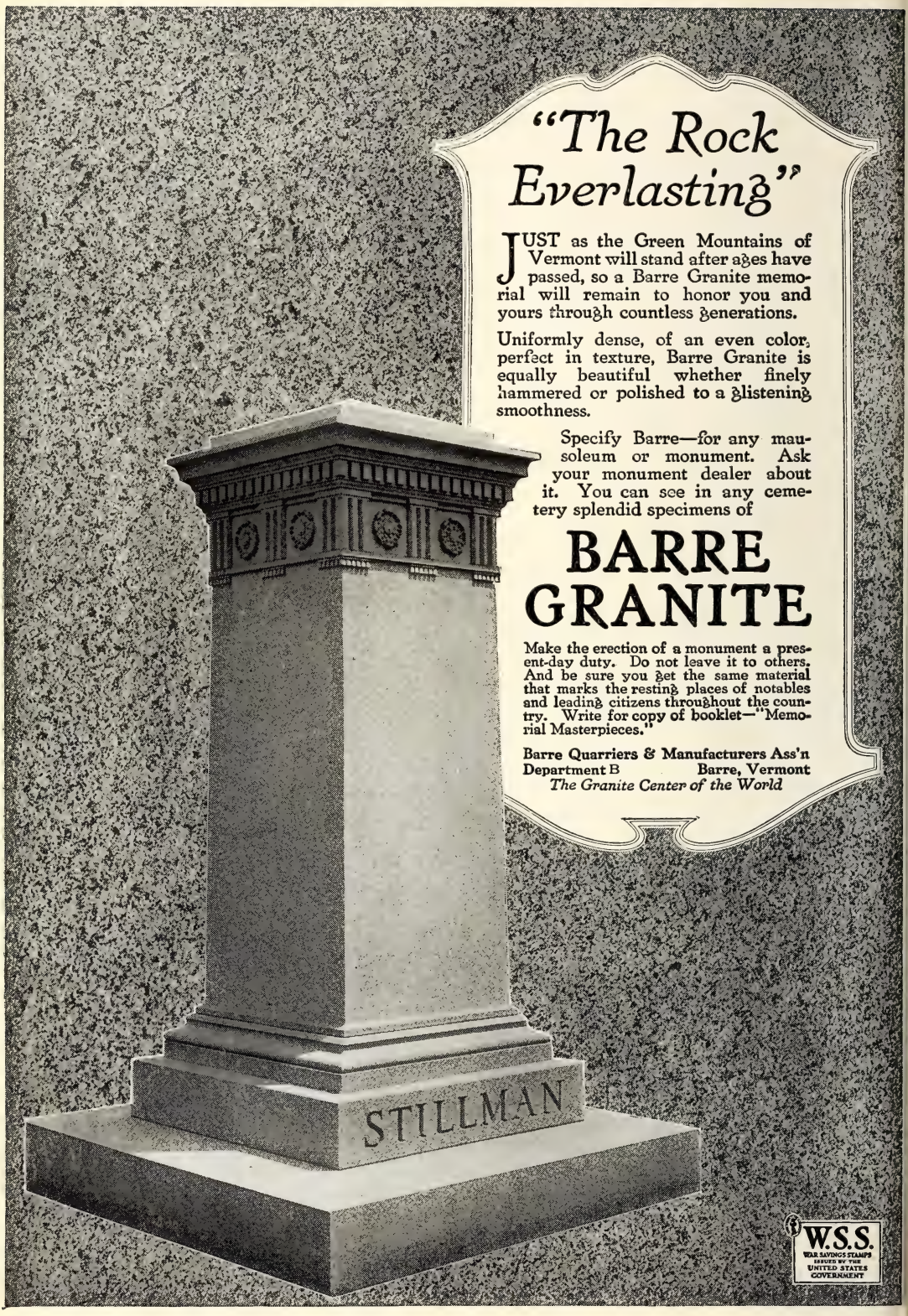
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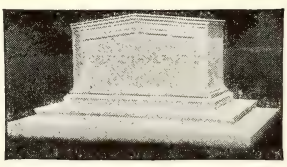

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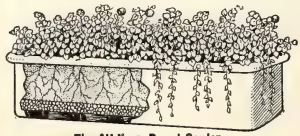

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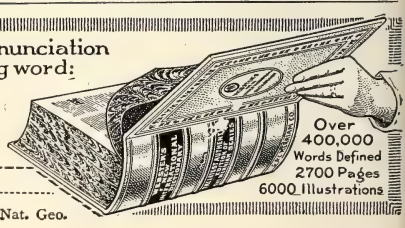

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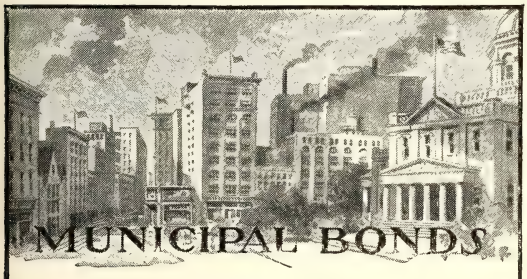

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THE NATIONAL GEOGRAPHIC MAGAZINE

OUR FRIENDS, THE FRENCH

An Appraisal of the Traits and Temperament of the Citizens of Our Sister Republic

BY CARL HOLLIDAY

DEAN OF THE UNIVERSITY OF TOLEDO, OHIO

WHAT manner of men are these French with whom our soldiers have been fighting side by side?

To many an American a Frenchman has long meant simply an elegantly dressed gentleman with a waxed mustache, a multitude of gestures, a shoulder that automatically shrugs, and a heart that is very susceptible to feminine charms; but during the last four years the average American has been revising his opinions of this citizen of the most civilized country on the globe and is now asking in amazement, "Can this dainty gentleman that I considered super-refined, romantic, sentimental, and effete be the hero who has held at bay the most ruthless nation in the history of man?"

Even so. This same gentleman, so different in his entire composition from those rugged, home-spun characters that we have produced—and admired—in America, is now the marvel of the world.

The French have proved to us, what we have long been unwilling to admit, that a man may be artistic and at the same time brave; that he may love finery and at the proper time fire a shot from a mudhole in the trenches that is heard around the world; that he may spend hours talking about art and belles-lettres and, when the call comes, march into a man-made hell and calmly lay down his life for his country. In short, we Americans have learned from the French that a man may possess all the refining effects of culture and at the same moment be a hero.

It is a wholesome lesson for us to learn that boastful swaggering and impolite aggressiveness and lack of consideration for the subtle, dainty refinements of civilized society are not necessarily related to strength, endurance, and heroism.

THE UNIQUE FRENCH TEMPERAMENT

The French temperament is unique; it is social champagne. A people full of tender feeling, they are not in the least averse to a public demonstration of emotion.

While the English and the American hide such sentiment with a certain appearance of stoicism, this unabashed people expresses itself frankly and publicly with kisses, embraces, tears, and an amazing flood of vivid words.

A school-boy when leaving his mother at the door as he departs for school receives more attention, hugs, warnings, and tokens of affection than would a Seattle boy starting for New York.

A family gathering or separating at a French railway station is an occasion as full of tears and cheek-kissing and pro-

Photograph by H. C. Ellis

A MASTERPIECE OF CULINARY ART: PHOTOGRAPHED IN THE KITCHEN OF A FAMOUS PARIS RESTAURANT

The Paris chef takes as great pride in such a piece de resistance as does the sculptor in his less perishable creation. The scientific cook has stood the French people in good stead during the past four and a half years, for he has brought all his skill into play in making palatable the most meager of rations.

longed embraces as that of an American bride leaving her fond mama, while the collision of two automobiles is an opportunity for oratory surpassing anything heard in America. And yet these are the people who said at Verdun, "They shall not pass!"

But an American must not take this French volatility too seriously. It is doubtful whether in the history of man the world has possessed a more good-natured, more patient people.

Contrary to foreign opinion, these French have almost infinite patience. In fact, their very patience with lax public administration and wrong legislation has sometimes been their undoing, and only on rare occasions and at long intervals, as in the French Revolution, will they be provoked into violent bursting of unjust restraints. But when they do, one is liable to recall the ancient warning, "Beware of the fury of a patient man."

Owing to their extreme intellectual alertness, they seem to us more silent folk forever arguing or scolding; but it is only that same energy transmuted into language rather than into the wasted physical action so often seen in America. That they are a people of exceptionally good disposition is proved by the fact that so few genuine physical clashes result from the veritable fusilade of argument that they constantly fire at one another.

"NO PEOPLE ENJOY THEMSELVES MORE THOROUGHLY"

Long ago Goldsmith pointed out that the French were the only people who could be happy while starving, and a modern writer, Barker, in his *France of the French,* has declared: "No people en-

Photograph by Ethel MacMurray

THE SPIRIT OF FRANCE

These men typify in their cheerfulness and readiness one of the national characteristics which made them invincible in the face of almost overwhelming odds of men and artillery in the first onrush of the Huns.

GENERAL VIEW OF LE PUY, DEPARTMENT OF HAUTE-LOIRE, SHOWING THE CATHEDRAL ON THE RIGHT, THE ROCK OF THE VIRGIN IN THE CENTER, AND NOTRE DAME D'AIGUILHE ON THE LEFT

The cathedral is an eleventh-twelfth century edifice of rare architectural interest. Mount Anis, the eminence in the center of the picture, is a volcanic rock rising to a height of 435 feet. It is crowned by a lofty statue of Notre Dame de France, cast from 200 cannons captured by the French at Sebastopol. The Church of St. Michel d'Aiguilhe, which surmounts the smaller pinnacle to the left, is a curious structure dating from the tenth century. Before the war 90,000 women were employed in lacemaking in the district of which Le Puy is the capital.

OVER THE COFFEE CUPS IN NORTHERN FRANCE

"It was the French woman's faith in small savings that rescued her country after the war of 1870, when vast horded wealth was willingly brought forth to pay the enormous national debt, and the same faith made it possible for France to preserve herself and the world during the world war."

joy themselves more thoroughly while they are about it."

Frugal, almost parsimonious, in their spending of a sou, how do they obtain all this pleasure? Our American conception of a good time, I fear, too often consists in spending a huge amount of money, in rushing madly hither and thither from this theater to that, from roof garden to summer resort, from ball to masquerade.

Your Frenchman, however, has a totally different conception of a good time. To him the society of his fellow-men is a source of exquisite and eternal pleasure.

Belonging to a people of infinite social capacity, a people in whom the social instinct is inherent and ancient, he has made fellowship an art of which he alone is the master. "Since there has been a France at all," says Brownell in his *French Traits,* "France has embodied the social instinct."

To neglect the art of making friends, of making oneself agreeable to those one meets, of making oneself nothing short of charming as a conversationalist, is to a Frenchman nothing short of domestic, commercial, and political suicide.

In short, the French have long since learned, what we Americans are simply beginning to learn, that social accomplishments should be purposely and purposefully exercised, and are a valuable part of life's equipment for the truly successful man.

LENDING GRACE TO THE HARDSHIPS OF LIFE

How adaptable is this social quality of the French! How it makes pleasant the rough road of life! It lends a personal grace not only to the necessities, but even to the very hardships, of life.

During this war I have taken dinner in French families where the bread was distressingly scarce and pitiably poor, the sugar limited to one cube per individual, butter entirely absent, and the quantity

Photograph by H. C. Ellis

THE PUBLIC NURSERY, WHERE BABY IS CARED FOR WHILE MOTHER WORKS IN A GOVERNMENT FACTORY

In France, as in every other country, the war is necessitating a great readjustment of economic life to accommodate conditions to the advent of woman in the industrial activities of the nation. Following her four and a half years of labor during the war, the French woman, no less than her British sister, has proved her right to economic independence.

Photograph by H. C. Ellis

BOOK STALLS ALONG THE SEINE: THE BOOKWORM'S PARADISE

"In the Frenchman we find an unusual love of philosophy and a certain worship of reason which are rather discouraging to us more loosely thinking, more sentimental, Americans. The Frenchman, even of the lower middle classes, is always searching for a reason, an explanation, a more thorough understanding of this and that."

of meat so small that only the national optimism could magnify it into a square meal, and yet the bon mot flourished upon this very poverty of food. It simply means that the Frenchman has learned to enjoy life independent of all circumstances, and whether in city or in trench he is still the man of society.

Near the battle fronts the American soldiers at meal time snatch up their mess kits, rush to the camp kitchen, hastily swallow their food with scarcely a word, and go about their business; but the French seat themselves with some ceremony, take an hour or more to eat their small ration, and meanwhile discuss with precision, energy, and lively wit a multitude of subjects.

WHERE THE FRENCH BECOME RETICENT

And yet, contrary to the common American opinion, the Frenchman is not at all effusive about his *personal* affairs. On philosophy, art, and literature he will debate with you with titanic energy, but attempt to divert the conversation into matters domestic or personal and you will find the talk suddenly languishing.

In other words, your Frenchman is not a believer in a "shameless exposure of spiritual nudity." His personal, domestic, and spiritual life are not for public or incidental discussion, and, though you may know him for years and spend a multitude of hours with him in the most stimulating conversations of your life, still you feel that you do not and probably cannot ever know his inner life.

He can have the most unselfish enthusiasm for your success; without a trace of jealousy he will wildly applaud the successful feats of his colleague in university, laboratory, or court; but never does he open his heart to you or that col-

Photograph by H. C. Ellis

THE ORNATE INTERIOR OF A GREAT PARIS DEPARTMENT STORE: IN COMMERCE, AS IN EVERY OTHER ACTIVITY OF LIFE, THE FRENCHMAN'S LOVE OF BEAUTY IS MANIFEST

The floral decorations seen here agree with the poetical name of this particular store, "Au Printemps" (In the Springtime)

Photograph by H. C. Ellis

A TRELLIS BUILT BY NAPOLEON I FOR HIS EMPRESS, MARIE LOUISE: COMPIEGNE

Like the Babylonian monarch who erected the famous Hanging Gardens to delight the eye of his princess, who amid the flat plains of Mesopotamia pined for her mountain home, so the first Bonaparte built this beautiful arbor to remind his homesick Austrian princess of her favorite trellis at Schonbrunn.

league concerning the troubles or the happiness about his hearthstone or the relationships existing behind the closed doors of his family residence.

What the Frenchman lacks, however, in talkativeness about his personal affairs he more than compensates for in his startling loquacity on things of a general nature; for in France intelligence is universal.

This does not mean that every Frenchman is well educated; it does not mean that he is widely traveled, but it does mean that mentally he is generally on tiptoes. As far as city and town life is concerned, it has been truly observed that "the sensation which France produces on the impressionable foreigner is, first of all, that of mental exhilaration."

And, be it remembered, this intellectual enthusiasm must not be classified as loose thinking. The French are astonishingly precise. Their intellectual precision is such that I am afraid it discourages their imagination. I cannot imagine a Parisian of the cultivated class indulging before his fireplace in those loose, wandering dreams in which so many Americans delight.

INTELLECTUAL CANDOR A NATIONAL TRAIT

Intimately connected with this attitude is the Frenchman's intellectual candor. Long accused by the Americans and the British of lacking this very quality simply because he does not make a public dissection of his personal inner life, he possesses, I believe, far greater intellectual frankness than either of his two allies, when dealing with the deeper problems of existence.

If he is an atheist, he is frankly one; if he is a believer in the necessity of some supposedly immoral tendency in man-

Photograph by H. C. Ellis

A WARD FOR THE CHILDREN OF THE POOR: FRANCE ENDEAVORS TO SAVE EVERY BABY WITHIN ITS BORDERS

The dowry custom in France has its good points, for it prevents hasty and poverty-ridden marriages; on the other hand, it is bad, for it deters marriage in a land where children are sorely needed and causes the French family to be small, so that the one or two children, when grown, may possess the proper financial attractions for marriage.

kind, he generally says so frankly; if the Trinity is beyond his conception, he does not camouflage his skepticism; unlike many Americans, he accepts few theories on faith, and what he cannot understand or accept he candidly rejects.

In the Frenchman, then, we find an unusual love of philosophy and a certain worship of reason which are rather discouraging to us more loosely thinking, more sentimental, Americans. Perhaps our tendency is to take too many ideas, facts, and things for granted; but the Frenchman, even of the lower middle classes, is always searching for a reason, an explanation, a more thorough understanding of this and that.

If at the table of my French hostess

Photograph by H. C. Ellis

A PERIPATETIC PURVEYOR OF FLYPAPER

He sells it rolled, so that the purchaser will not feel stuck up by his purchase

I inquired as to the origin of some word or the theory of some science, *voila!* an animated discussion immediately, a sifting of opinions, a peeping into dictionaries and encyclopedias, an astonishing volley of facts, and when the subject is dropped it is because that subject has been perforated, riddled, heartlessly dismembered.

But if it has passed through the dissecting-room its anatomy has forever been made clear to me. In other words, vague, sentimental reflections seem rather distasteful to the twentieth century Frenchman, and his bravery in acknowledging and facing facts might well be imitated to some degree by our own countrymen.

IN THE FRENCH SCHOOLS

Your Frenchman, from the boy in the lycée to the professor in the university, is sure that complex life can be reduced to a comprehensible system; his tenacity in developing and defending a logical system worked out from a given definition is wholly admirable.

Indeed, to one who has seen the lackadaisical air of the average American student toward the class-room discussion of some purely abstract idea, this French zeal in defending an intellectual point or theory, this seizing upon an abstraction as a sort of object of faith to be debated upon with enthusiasm, to be battled over if need be, comes as a pleasing shock.

If, therefore, any American still clings to the old-time opinion that the French are a frivolous people he should immediately revise his theory. They are startlingly serious and their very seriousness has led throughout their history to what has been called their tragic antagonism of conviction.

Such intellectual alertness would not allow any people to remain contentedly unanimous, but on the other hand has led to internal hatreds among the French so keen, so heated, that only a common intense patriotism has preserved safety.

Photograph by L. Boulanger

GRAPE GATHERERS AT EPERNAY, CHAMPAGNE DISTRICT

Once the pride of France and the delight of connoisseurs of rare vintages, the fields of Champagne have been blasted by high explosive shells, sprayed with the steel of bursting shrapnel, and poisoned with the fumes of deadly gases. But French thrift will soon restore them, and smiling vineyards will again clothe these hills, concealing forever the scars of war.

Photograph by H. C. Ellis

A STRANGE MIXTURE OF GENIUS: REAL FRENCH DEMOCRACY

Seated, beginning at reader's left: 1. Vanbiehl, said to have invented "Rock and Rye"; 2. Madame Rodin, wife of the sculptor; 3. Flammarion, the astronomer; 4. Rodin, the sculptor; 5. Madame Flammarion, wife of the astronomer; 6 Mlle. Chabas, daughter of the French artist and niece of Paul Chabas, painter of "September Morn." Standing, beginning at reader's left: 1. Auberten, one of the most gifted of modern French artists; 2. Mrs. Vanbiehl, recently in charge of Loie Fuller's girls, who have been dancing for our soldiers; 3. Madame Auberten, wife of the painter; 5. Loie Fuller; 7. Maurice Chabas, painter, brother of Paul.

Photograph by H. C. Ellis

A GROUP OF ARTISTS IN A BOHEMIAN CAFÉ: PARIS

The poet, Paul Fort (front row, second from the right), has just finished reciting one of his own compositions and seems well satisfied with himself

This worship of reason, this desire for precision and clearness, this regard for method and established procedure, has caused in business and governmental activities a curiously encumbering effect.

The profound faith prevalent in France in ticketing, labeling, and filing has led to what a British observer, Barker, has called "the plague of *petits papiers*." Indeed, he continued, "one is administered in France from the cradle to the grave, and sometime afterwards."

The mass of administrative machinery in many fields is astounding, even to an American, and the French themselves grin sarcastically, but patiently, over the amount of sheets, tickets, tags, and general red tape connected with the most ordinary activities of governmental life.

THEIR REVERENCE FOR CONVENTIONS

Nor is this profound regard for method and established procedure limited to affairs of government; it permeates all society and may be seen in the reverent attitude toward conventions and in a sort of social slavery toward petty observances handed down from the remote past. To an American, scornful of traditions, it is almost beyond understanding—this doing a thing generation after generation simply because it has long been the custom to do the thing.

Naturally this close attention to method in daily life causes a reflex action upon all the mental processes of the French. Their constant regard for form and clearness has fostered a genuine passion for arranging, modifying, and combining all things symmetrically.

Revealed in their formal gardens, the exact balance found in their architecture and sculpture, their careful attention to exactness in musical counterpoint, and their orderliness in writing, this idea of form impresses itself upon the visitor wherever he turns. The explicitness, the certainty, the conformity to established

Photograph by H. C. Ellis

A FRENCH DESIGNER AND ARTIST: IN SUCH STUDIOS AND FROM SUCH HANDS ORIGINATE THE FASHIONS FOR WHICH ALL WOMANKIND LOOKS TO PARIS

This creator of fashion plates, Caprillo, turned his talents to the production of vivid war posters during the world conflict

Photograph by H. C. Ellis

L'HERMITTE, WITH HIS PEASANT MODELS ABOUT HIM, AS HE PAINTS ON THE BANK OF THE MARNE

"In the older paintings of France there was a decided liking for allegory, or symbolism, notably in the seventeenth and earlier years of the eighteenth century; but today there is a tendency toward the same realism and naturalism as is found in modern French literature"

ideals of fitness—these proclaim the intense sanity of the French mind. *What the French know, they possess.*

The Frenchman is terribly explicit. His exactness, were it not relieved by so many human qualities, would be excessively unsympathetic. The clearness of the language itself, its almost faultless precision, long ago made it the language of diplomacy; its very clarity reflexively conduces toward clearness in thinking.

THE MOTHER OF CRITICS

All this must connote a high degree of critical taste; for every one is constantly guarding against the vague, the unsymmetrical, the inelegant manner of expression; every one is constantly watching for things, ideas, and forms that appeal to the æsthetic nature. The result has naturally been that France is the mother of a majority of the keenest masters of criticism in modern times, not only in literature, but in music, painting, architecture, and sculpture.

If there is such a thing as being too sane, as some of our psychologists warn us, then France's extreme regard for the sanity, the orderliness, the symmetry of life may some day prove dangerous; but at present the wholesome, jovial, almost effervescent nature of these very human people shows little sign of such a peril.

One may expect to find, therefore, in French art a profound regard for what may be called the artistic proprieties—in other words, *style*. To a foreigner, French painting and sculpture may seem to possess more of order and movement than of profound motive.

Edith Wharton has said: "However lofty and beautiful a man's act or his purpose, it gains by being performed with what the French . . . call 'elegance.' . . . They do not care for the raw material of sensation: food must be exquisitely cooked, emotions eloquently expressed, desire emotionally heightened, every experience must be transmuted into terms of beauty before it touches their imagination."

Beauty is unquestionably present in their sculpture, painting, architecture; but whether one finds here the terrific energy, the abandonment, the fine frenzy seen in some of the work of the Italians is indeed a question.

In fact, French art sometimes seems to be more the fruit of intelligence than of overpowering genius. It is so absolutely finished, so decisively clear, that it leaves perhaps too little to the imagination. It reminds one of the dignified symmetry and grandeur of portions of Milton's *Paradise Lost*, but not of the stormy emotion of the poems of Burns or Byron.

One finds oneself, even in one's admiration for it all, secretly longing for a little irregularity, a touch of the unusual, a flash of the wild abandonment that often thrills one in the primeval wilderness.

But violence in any form has until very lately been rather repugnant to the French artistic sense—violence in color, line, and contrasts—and symmetry, ideal, restful, eternal symmetry, takes the place of successful audacity.

TRIUMPHS OF FRENCH ART

But in spite of all this, what nation has equaled France in high general level of artistic production? Where may be found her equal in Gothic architecture—her Notre Dame, St. Chapelle, the cathedrals of Rheims and Rouen? Where, too, may be found the rival of Paris in noble modifications of the Greek—the Madeleine, the Pantheon, the Palais Royal, and a score of others?

Repeatedly from the Middle Ages to this present hour the French masters have led Europe in finish and clearness of sculpture. An art lavishly supported from public funds, it has found expression in such marvelous works as Delore's "Triumph of the Republic," Barries' "The First Burials," and Rodin's "The Thinker," "Balzac," and "The Hand of God." In the older paintings of France there was a decided liking for allegory or symbolism, notably in the seventeenth and earlier years of the eighteenth century—it is so apparent in the work of Versailles—but today there is a tendency toward the same realism and naturalism as is found in modern French literature.

I fear that many an American looks upon French art as a thing of general

Photograph by H. C. Ellis

THE FRENCH LOVE THE VARIED PROGRAM OF THE VAUDEVILLE: SCENE IN A PARIS THEATER

The histrionic ability of the French surpasses that of any other people. For them the theater is a great cultural and educational institution, and they support it with public funds in the same spirit that they support their schools.

immoral tone. It may be that our Puritan instinct is shocked by the frequent recurrence of the nude in the paintings of France—as though the human body were something abhorrent and never to be admired among decent people.

But French art is not immoral; it is simply frank. Undoubtedly most of the money gained in Paris from salacious art comes from foreign pockets; for if a Frenchman seeks immorality he spends no money on poor imitations.

To judge French painting as it really is, one has simply to look at such masterpieces as Corot's "Matin," Lorrain's "Village Fête," Millet's "Gleaners," Rosa Bonheur's "Horse Fair," Jules Breton's "Return of the Harvesters," and Monet's "Cathedral of Rouen." The truthfulness, the simple dignity, the exquisite finish, of these painted stories from French life are proof enough that French art is the product of admirable skill and untiring patience.

THE DEBATABLE QUESTION OF FRENCH MUSIC

Many a French singer apparently has the skill, but many an American loses his patience trying to understand French music. In these times it may be heresy to say it, but French music seems to a foreigner to lack the deep emotional and ethical quality of the greater German music; nor has it that positive lyrical quality found in Italian opera.

There has indeed been considerable dispute among critics as to whether there is yet a distinctly national quality in French music. There are large numbers of charming old melodies, but these are provincial, not national.

There are, of course, approaches to national airs in the "Noels," or ancient Christmas songs, while "The Marseillaise" is and will long remain not only a national but an international expression of love of freedom. But all this does not prove the case for French music.

In light opera these people have undoubtedly far surpassed the Germans and the English, but in grand opera we may find constantly cropping out the influence of Italian and German masters. What we Americans miss is the *continued* melody, the completed lyrical composition, that sings itself in one's ears for days and perhaps months after one has heard the opera. Then, too, to an American the French voice seems rather thin, and even the French themselves will admit that only a few of their greatest singers have been native born.

But it must be remembered that most of the famous singers of the world have looked upon Paris as "home"; for here was the birthplace of such masterly compositions as Bizet's "Carmen," Berlioz's "Damnation of Faust," Thomas' "Mignon," Gounod's "Faust," Massenet's "Manon," and Saint-Saëns' "Samson and Delilah."

THE GLORIES OF THE FRENCH STAGE

One may qualify one's remarks on the music of the Frenchman, but who can overstate the glories of the French stage? "Most French people are born actors"; indeed, their histrionic ability probably surpasses that of all other nations.

Possessing exceptional mobility of feature, vigorous and dramatic gestures, a language so exact as to be almost mathematical, a natural clarity of expression, they have in their very infancy those characteristics for which actors in other lands toil a lifetime.

Then, too, Americans should bear in mind the vast advantage the French actor has in having, what America does not yet possess, *a national public interest in the theater.* In fact, the theater is part of the life of the nation; it is considered a branch of public instruction, under the control of the national department of education; its leading representatives at Paris—the Opera, the Opera Comique, the Odeon, and the Comedie Française—receive a large annual support from government funds, just as, for instance, the agricultural schools do in America.

The result has been such world-famous dramatists as Molière, Racine, Corneille, Sardou, and Rostand; such masters of acting as Alexandre and Constant Coquelin, Antoine, Mounet-Sully, and Sarah Bernhardt.

Just as histrionic ability is native to the Frenchman, so one might also declare that the *scientific* attitude is characteristic of a great number of the French. The average native has enormous curiosity;

IN CASSOCK AND KHAKI: A FRENCH ABBOT AND AN AMERICAN LIEUTENANT IN A MONASTERY GARDEN

"Mainly Catholic in their traditions and sentiment, the common people still reverence the vast institution governed from Rome; but the educated classes, because of their belief in its opposition to certain democratic movements, have in recent years been rather alienated."

Photographs courtesy of W. L. Jaekal

A PEASANT HOME IN WESTERN FRANCE WHERE AMERICAN OFFICERS WERE RECENTLY BILLETED

The soldiers' hostess and host are to be seen at the left. Note the horse and the ox harnessed in tandem fashion. If this were in Austria or Hungary the woman would be the yoke-mate of the ox.

Photograph by H. C. Ellis

THE TOWN GATE AT PROVINS

Note the sturdy strength of the French peasant woman trundling a heavily loaded wheelbarrow and the two men in the cart riding toward her. The quaint old town of Provins in the middle ages was a great industrial center, having a population of 80,000, of whom 60,000 were workmen. At the beginning of the world war it had scarcely 8,000 inhabitants.

he likes to be shown how; he admires accuracy; he worships reason. The result is that today this nation holds leadership in Europe in the sciences, especially the applied sciences.

The French peasant has been accused of lacking imagination; but the imagination of the French scientist leaps to meet the correct solution, while the German scientist plods toward it.

THE GIFT OF FRENCH SCIENCE TO MAN'S WELFARE

What marvelous skill has the Frenchman shown in the application of science to human diseases and deformities; what marvelous research has been his in bacteriology, neurology, and pathology; what patience, what accuracy, what insight, has he displayed in clinical observation and description!

To realize what French science has done for man's welfare, one has simply to recall the names of Ampère, the investigator of electrical dynamics; Pasteur, the master of bacteriological research, conqueror of rabies, and founder of the famous institute that bears his name; Roux, discoverer of diptheria serum; Chantemesse of anti-typhus serum fame; Yersin, discoverer of the bubonic plague bacillus and its curative serum; Claude Bernard, marvelous worker in vivisection; Berthelot, founder of thermo-chemistry, inventor of smokeless powder and aniline dyes; Pierre and Madame Curie, discoverers of polonium and radium; and Flammarion, master and interpretor of astronomy. The list has but begun; it might fill a score of pages.

But let us turn once more to the more strictly human side of French life. What shall one say, for instance, of what we Puritan descendants consider so vitally

Photograph by H. C. Ellis

A TYPICAL FRENCH KITCHEN IN A BETTER-CLASS HOME: THE COPPER KETTLES AND PANS ARE PERHAPS TWO HUNDRED YEARS OLD

In addition to being an extraordinarily good cook, the French woman is an exceptionally shrewd buyer, and to observe her at market is to learn much in economics, mathematics, and oratory. "She simply refuses to pay the first price quoted, and her genius for 'getting what you can' is admirable."

important—the ethical viewpoint of the nation?

Frankly, here is where the French and we have long misunderstood each other. Just as frankly, we Americans do not consider these people as of a profoundly religious temperament.

Your Frenchman is willing to admit that the church is a helpful institution, to be respected always and utilized at intervals; but when its religion undertakes to interfere with what he considers the natural activities of a normal life it is liable to receive a cold shoulder.

Mainly Catholic in their traditions and sentiment, the common people still reverence the vast institution governed from Rome; but the educated classes, because of their belief in its opposition to certain democratic movements, have, in recent years, been rather alienated.

Fortunately, the recent law separating church from state and the patriotic attitude of the clergy, whether Catholic, Protestant, or Jewish, in the present war has undoubtedly improved the standing of organized religion in the nation.

Morally the French are not an introspective people as were our Puritan forefathers. Your Frenchman does not always believe that his conscience decides aright; he does not rely implicitly upon it; he has an unhesitating belief in a sane following of natural instincts. Puritanism meant *restraint;* Parisianism means *expression.*

In the words of one observer: "To violate the heart's dictates, which are the direct behests of nature, is, in his eyes, either pedantry or folly. . . . It is not a question at all of a higher law, but of the natural instincts of man, which on the one hand he is to preserve from . . . depravity . . . . and on the other to organize in such a way as to benefit that highly artificial institution known as society, in the direction of natural development, and not natural restraint."

The suggestions of culture, the dictates of science, the voice of society, must be considered, and one must distinguish between the anti-legal and the anti-social. Business immorality is a thing to be detested, affecting as it may the whole of economic society—a thing more dangerous than personal immorality, which is largely one's own business.

FRANCE MISJUDGED BECAUSE FOREIGNERS SEEKING SIN FOUND IT

France no doubt has its weaknesses, for which no excuses need be attempted. The immorality of women, however, in that great country has been shamefully exaggerated.

Because the foreigners seeking sin found it on certain Paris boulevards they concluded that this frank sexual advertising was characteristic of France, whereas the average French girl is as zealously shielded from temptation as was ever the daughter of the Pilgrim father. But to love intensely and passionately is the French girl's hope and desire; and why should it not be?

On the subject of sobriety one may not be so kindly a critic at present. A few years before the war there began a rapid increase in the use of alcohol, especially among the city working class and lower bourgeoisie—an increase indeed formidable to public health.

The use of light wines as a universal beverage may have had only a slight debilitating effect; but as the increasing excise duty on wines caused a greater demand for cheaper and more violent spirits, and as the use of absinthe and apéritifs became more popular, the rate of pure alcohol used per person in France at length reached in 1916 the entirely too large amount of 1¼ liters.

Nor has the war discouraged the drinking habit. Many a poor soul has found solace in the bottle after the day's drudgery of war work.

The Frenchman makes no pretext of hiding his love of the game of chance. Generally he is too shrewd to place large amounts at stake, but the sum total of the national betting must be an enormous amount.

Theoretically gambling is illegal, but under the name of casinos and clubs it thrives, and the government, always liberal and tolerant toward lotteries and other forms of the vice, collects approximately 15 per cent of the incomes of such places in the form of a license tax. Horse-race betting, like the casinos, is under strict government supervision, and

Photograph by H. C. Ellis

A SCHOOL ON WHEELS IN FRANCE

The children's parents are members of a carnival company, traveling from town to town, much like our circuses. Because their fathers and mothers lead a nomadic existence is no reason why the education of the youngsters should be neglected, and this is how the problem is solved by the alert and resourceful French.

nowhere may one find such honest gambling—if such a thing is possible—as in France.

THE DUELLING CUSTOM

Still another derogatory remark and we shall pass to more pleasant phases of French life. To us duelling is utterly ridiculous; to the French it is a quick and unostentatious manner of settling personal difficulties.

There is a code of conduct for civilized men and, in the Frenchman's view, a man should hold himself responsible for departing from it. Why carry such a matter, however, into the court? It is a private and personal affair. Why give it publicity in the newspapers and make lawyers rich and take the time of the judge and law courts?

A pistol shot or a slight thrust of the sword and the thing is settled, says your Frenchman. If the opponents are not killed they will both acknowledge that the code of conduct has been defended and vindicated; if one is killed the other

Photograph by H. C. Ellis

A BIT OF FUN OR A HUMANE PROVISION FOR THE COMFORT OF THIS PATIENT LITTLE PLODDER?

The trousers are supposed to keep off the flies, but the clever mountebank knows that they also attract attention to his traveling Punch and Judy show

may be prosecuted for homicide, but if it was a fair duel is almost certain of acquittal.

Often indeed a French duel has resulted from what we Americans would consider very small breaches of politeness. But we must remember that politeness is one of the most marked national characteristics; the courtesy of the French, "punctilious," as some one has called it, is but another evidence of their love of form, system, established tradition. "The French put the same intentions into manners that all civilized people do into language, and have systematized them with the same care for correctness on the one hand and pliability on the other."

This observance of traditionally polite forms is often irritating to the hasty American. I remember that after I had waited in line an hour and a quarter in a Parisian railway station to reserve a seat on a train I was dumbfounded to see two women clerks enter the office and hold up the entire business of the occasion to say good night and shake hands with every one behind the counter.

What is the use, says your average American, of this constant tipping of hats among the men, this constant shaking of hands when entering and leaving an office, this saying of farewell a dozen times before one goes? But the French know what they are about. Long centuries of such little courtesies have reduced the forms of politeness almost to a ritual, and every French boy, unlike every American boy, knows exactly what to say and how to act in every business or social situation.

THE FRENCH HOUSEWIFE WITHOUT AN EQUAL IN ECONOMY

The French have long been a shrewd, calculating people who have watched closely every sou. They may seem ro-

Photograph by H. C. Ellis

THE ARTICHOKE SECTION IN CENTRAL MARKET, PARIS

The immense quantities of vegetables eaten by the French counteract in a measure the effect of some habits less healthful

mantic to foreigners; their passionate protestations of love may seem too frank to us of Puritan descent; but in not only financial affairs, but even their pleasures, they minutely calculate all items.

Probably there is not in the world the equal of the French housewife in economy and efficiency. Before the war wages were astonishingly low in France, and there must have been continual squeezing of each franc; but, thanks to the ability of the French wife, who could tell from outside evidence that there was unusual stinting in the average home?

To see a French woman bargain at the market is to learn much in economics, mathematics—and oratory. She simply refuses to pay the first price quoted; her genius for "getting what you can" is admirable.

The Frenchman is not so careful and is too liable to be drawn to the café for a consoling drink or the seductive game of piquet; but the hand that holds the purse-string is the hand that rules the world—and the French wife holds it tightly. Her faith in small savings rescued France after the war of 1870, when vast horded wealth was willingly brought forth to pay the enormous national debt, and the same faith made it possible for France to preserve herself and the world during the world war.

FRENCH PARENTAL REVERENCE EQUALED IN CHINA ONLY

With such women, is it any marvel that the French home is so admirably united? The family is the primal social fact in France, and the parents are "the fundamental fact without which the organism (the family) could never have come into being." Hence there is a reverence for parents equaled probably only by the ancestral worship of China. Indeed, it is very doubtful whether the love between husband and wife equals that existing between parent and child.

NOT ALL THE GOOD FRENCH COOKS ARE EMPLOYED IN THE PARIS RESTAURANTS

"Probably there is not in all the world the equal of the French housewife in economy and efficiency"

There is constant consultation with parents and relatives by sons and daughters of advanced years—a form of consultation scarcely ever heard of in an American family.

If a Frenchman of thirty or thirty-five proposes changing his profession, he may consult not only his father and his mother, but the entire family group; the proposed marriage of a daughter or a son is often an occasion for a council of the entire clan, including distant relatives that in America would hardly be included in our family tree.

The world has been fond of pointing out that the French language has no word for "home." It has a word possibly even more tender. What a meaning is in the sound of "foyer"! It includes the concept of hearthstone and much more. It brings to the French mind and heart all the ideals, activities, and dreams of a close, inner circle where obedience is a joy, respect a willing observance, and love an ever-present radiance.

The foyer is not for the outside world; only behind locked doors does it really live and flourish. The father may deal with the outside world of business, but here in the foyer the mother generally rules supreme, and her influence is everywhere seen in it.

Is it any wonder that when one parent dies the other is immediately taken into the home of the married son or daughter, there to rule as a sort of benevolent, enlightened despot?

COURTSHIP AMONG THE FRENCH

Perhaps some youthful American reader of these pages has already asked, How can there be any courtship in so private a home, where everybody within the charmed circle is consulted about all the affairs connected with that circle?

As a preparatory step toward such a

Photograph from G. Fattorussa

PARIS: PERSPECTIVE OF SEVEN BRIDGES—VIEW TAKEN FROM ST. GERVAISE

The winding course of the Seine through the city, measuring seven miles, is crossed by 31 bridges. Rising from the river are two islands of considerable size: the Ile St. Louis and the Ile de la Cité. Thus the capital is divided into three parts—the quarters on the right bank, the Cité with the island of St. Louis, and the quarters on the left bank. In the distant background of this picture the Eiffel Tower looms to the left and the Arch of Triumph to the right.

Photograph by H. C. Ellis

A WOMAN'S WORK AT THE CENTRAL MARKET IN PARIS

Like London's Covent Garden flower market and the fish market of Venice, the Central Market of Paris is one of the sights of the city. Much of the heavy labor in this market fell to the lot of women even before the war so sorely depleted the man-power of France.

beautiful home life one would think that there should first be a most romantic love affair, with moonlight walks and whispered words of adoration and all the other pretty things found in the sentimental novel.

Unfortunately or fortunately—as you may view it—these accompaniments of American match-making are frequently totally absent from French courtship. Indeed, in the middle and higher classes of French society there is often very little possibility of love-making before marriage.

Owing to the family regulations and the fact that there are few coeducational schools in the country, the French girl seldom makes with boys those confident, personal friendships so common in America.

In the main the French mother prefers not to trust her daughter alone with a man; if they are to do any loving, it is better that they do it where she can keep an observant eye on them. In spite of such manifest difficulties in the preliminaries, the French girl probably desires marriage more ardently than the American girl confessedly desires it. There is so much supervision of the French lass in her home that her only release seems to lie in marriage.

Hence a remarkable docility in the matter of the choice of a husband. Some one has said that the French woman marries, not because of love, but with the hope of love afterwards.

With the letters of her sweetheart too often the property of the entire household, with too little opportunity really to "size up" the future husband, and with the necessity oftentimes of obtaining the consent of practically the entire family group, she cannot rely altogether on the

Photograph by H. C. Ellis

TRUFFLES, USED FOR FLAVORING FRENCH DISHES: THIS HANDFUL IS WORTH ALMOST 500 FRANCS

Pigs and dogs are trained to hunt truffles. Some varieties, however, exhale so powerful an odor that their places of growth beneath the surface can readily be detected by the gatherers of the precious fungi.

dictates of the heart, but may accept the husband in a manner that would seem curiously business-like and matter-of-fact to the American girl.

THE DOWRY A TRUST FUND FOR CHILDREN

I have said that the consent of the family group is generally requested. To the French a marriage means readjustment of the entire family group, and obviously, according to French reasoning, all members of the family must be consulted.

And this "round-table" discussion deals often with matters so extremely material that under similar circumstances the American girl would feel shocked if not positively insulted; for extreme financial prudence enters into the conference.

In the better-class families a dowry accompanying the wife will practically be demanded. What does she bring with her? is the not uncommon question of the young man's parents.

Extremely prudential it all may seem; but one should remember that this dowry is not to be used by the husband for his personal use, but as a trust fund for the maintenance of the expected children. If the wife dies childless the dowry will, in all probability, revert to her family; the theory of the affair is that such property belongs not to the individual—either husband or wife—but to the family as an institution.

In some ways such foresight is good, for it prevents hasty and poverty-ridden marriage; in other ways it is bad, for it deters marriage in a land where children are sorely needed and causes the French family to be small, so that the one or two children, when grown, may possess the proper financial attractions for marriage. Hence, too, the unusual importance attached to the child in the French home. He or she is a somewhat expensive luxury; his or her intelligence may be unduly forced; he or she may become almost unpleasantly precocious; he

Photograph by H. C. Ellis

THE FOUNTAIN OF NEPTUNE, AT VERSAILLES

The leveling of the ground for the gardens and park of the palace at Versailles, the making of a road to Paris (11 miles distant), and the erection of the Aqueduc de Maintenon to bring water for the fountains from the River Eure are said to have occupied 36,000 men and 6,000 horses for years, while the palace itself cost in the neighborhood of $100,000,000, in addition to the forced labor exacted under the old feudal system. The fountains at Versailles only play on the first Sunday of each month from May to October and on special fête days.

or she must be given a bountiful start in life.

What is the effect of this attitude toward the child? To an American it makes the higher class French girl an adorably innocent and totally feminine woman—the number of international marriages during and after this war will prove the statement—while to that same American it makes the young Frenchman starting on a commercial or professional career seem rather lacking in that aggressiveness and daring so much admired in American business circles.

Again, for the sake of the child, the family and the foyer, the French wife is more likely to forgive transgressions of matrimonial rectitude than would the American wife. A father's neglect of his family is, in the French woman's eyes, far more criminal than the temporary straying of the husband into doubtful relations with another woman.

With us conjugal rectitude is of primary importance; with the French that rectitude which sees that the home remains intact and comfortable is more important. In other words, your French wife is likely to consider *domestic* faithfulness more essential, more to be demanded, than *conjugal* faithfulness.

NO MILITANT SUFFRAGE SPIRIT IN FRANCE

Such a home, such a privacy of domestic life, does not encourage the French woman to take a large part in the public life of her nation. For instance, there seems to be an astonishingly small interest among the average French women as to whether they shall ever be allowed to vote. They seem very willing, in their

Photograph by H. C. Ellis

CHATEAU PIERREFONDS: NORTHERN FRANCE

Situated midway between Compiegne and Villers-Cotterets, this imposing feudal castle was one of the most cherished relics of medieval times. It stood on a rocky height overlooking the village of Pierrefonds and was built by Louis of Orleans, brother of Charles VI, in 1390. Its walls are from 16 to 20 feet thick and its eight massive loop-holed towers rise to a height of 115 feet. It has suffered much during the war from aërial bombardment by the Huns.

extreme femininity, to leave the matter entirely to the men.

And what a wonderful government these Frenchmen have made through their vote! Democracy is indeed the test of all national activities. The French government shows genuine respect for the *average* citizen; indeed, every Frenchman seems proud that he is simply an average citizen. Hence the whole tendency of the government is to work consciously against legalization of social inequalities.

Any man with ability and ambition can rise to any position. The bourgeoisie or middle class—that is, the traders, professional men, military officers, peasant-proprietors, etc.—is so large that all other classes are negligible, and necessarily there is extremely wide social equality.

Again, French democracy, since it is popular, is admirably authoritative. The people show a surprising submission to a large amount of state administration. It is not the supine submission found in Germany or the uninquiring attitude found in a large portion of England's lowest classes; it is willing, intelligent obedience to administrative machinery created by the people themselves.

Perhaps, as stated before, there is too much machinery; perhaps there is too much centralization of national activities under government control in one spot (Paris); but, after all, the widespread interest in active self-government, the healthful, vigorous, often passionate, public discussion, the political alertness of the people as a whole, means safety for France.

There may be too much centralization in Paris; but every Frenchman, whether he lives in a Normandy village or in the mountains that look toward Switzerland, is proud of this city that has long been the light of the world.

"The light of the world!" May not the words be applied justly to all France? What would Europe be without her? One can conceive of a Europe existing without Germany or Russia, but the glory of the continent would be extinguished if France should die. It is for her and what she has long represented in liberty that the world battled yesterday. That nation which seeks to destroy France is foredoomed to destruction.

THE PRICE OF LIBERTY, EQUALITY, FRATERNITY

THE price in stalwart young manhood which the French nation has paid during the world war to preserve human liberties has exceeded by appalling numbers the toll exacted of her associate Allies.

While France has not yet made an official announcement as to her losses, it is estimated that one million eight hundred thousand French patriots have laid down their lives on the altar of their country's freedom; one million gave limb, sight, or health, and were thus rendered permanently incapacitated for their accustomed pursuits of peace; one million two hundred thousand others sustained injuries which have retarded their activities.

Thus, four million men is the tribute that war has exacted of what Mr. Holliday rightly characterizes as the most civilized country on the globe for the salvation of her own people and the safeguarding of her democratic institutions.

What if America had suffered such losses in proportion to her population? Every man between the ages of 21 and 30 who registered for military service in the United States on June 5, 1917—more than nine and a half million in number—would be a casualty today, and there would still be a million and a half men to be added from the registration lists of September 12, 1918. Mothers, fathers, wives, brothers, sisters, and sweethearts would be mourning for five million American dead.

For every ten men, women, and children in France at the outbreak of the war one able-bodied citizen in the prime of manhood has either laid down his life or suffered bodily injury. The casualties in no other army save the Serbian even approached such sweeping percentages.

Truly, the sons of France gave themselves without stint for the cause of world democracy.

VIEW OF THE HOLY OF HOLIES OF RUSSIA, SHOWING THE HIGH WALL AND LOFTY WATCH-TOWERS WHICH INCLOSE IT

Originally a fort, the Kremlin is now museum, mausoleum, and treasure-house of things precious in Russian life and Russian religion. In no other equal area in the world is there crowded such an array of historic cathedrals and monasteries, sacred relics, trophies of war, sacerdotal robes, gold and silver vessels, precious stones, pearls, and jewels to the value of millions of dollars, etc. The principal buildings, reading from the left, are: (1) Treasury and Museum; (2) Grand Palace; (3) Cathedral of Annunciation, where the Tsars were baptized and married; (4) Cathedral of Archangels, where all the Tsars were buried until Peter the Great; (5) Cathedral of Our Saviour behind the Golden Gate; (6) Cathedral of Assumption, where the Tsars were crowned (see pages 381 and 382); (7) The Bell Tower; (8) Monastery of Miracles (see page 384).

THE REBIRTH OF RELIGION IN RUSSIA

The Church Reorganized While Bolshevik Cannon Spread Destruction in the Nation's Holy of Holies

By Thomas Whittemore

THE Holy Kremlin of Moscow has become a Bolshevik fortress. From the 9th to the 16th of November, 1917, for more than seven days under a hurricane of fire, the city was stormed and finally carried by the Bolsheviks in terrible fratricidal war. Since then the sacred citadel has been playing a new and ignominious rôle in the history of Russia.

From the time of the building of the Church of the Beheading of St. John Baptist and of the little Church of our Saviour in the Forest, bespeaking the days when the acropolis was still a wooded hill, a multitude of churches and palaces, witnesses of Russia's glory, have written here a national document in stone. The history of Russia is the history of the monuments of the Kremlin.

During the bombardment a Chinese workman, looking on, was heard to say, "The Russian is not good; bad man; he shoots on his God."

Outraged and despoiled, the Kremlin is in bonds today, guarded by foreign mercenaries. The forty times forty churches of the white stone city seem to draw a little closer in answer to the trumpet calls of the Kremlin domes. The battered towers and shredded gates, from which red flags are defiantly flung in the face of Russia, still stand bravely to protect the sacred site.

Deputations from the Sobor, or Russian Council, now sitting in Moscow, have abjectly to ask the Bolshevik committees' permission to hold services in the churches of the Kremlin. If the Bolsheviks dared, they would long since have declared the churches of the Kremlin to be museums, and so extinguished their light of faith.

The representatives of the Church have acted in fearless determination that the churches should continue to function, and have continued their sessions amid the violence and destruction raging on all sides of them (see also pages 392 and 393).

Entrance to the once always open Kremlin is now only by permit, through the Troitsa gate. All day long a moving line of people on various missions, showing their passports at the window of a little wooden kiosk, beg to be allowed to enter.

A SCENE OF SACRILEGE WITHIN THE KREMLIN

Once within the walls of the Kremlin, one faces piles of ammunition, barbed wire, and ugly miscellaneous heaps of rubbish. Austrian, German, and Lettish soldiers, some frankly in their enemy uniforms, are lounging about or standing guard. Army motor-lorries and cars carrying dark, sallow, un-Russian-faced government officials tear up through the gates, shrieking a curse, so it seems, as they enter upon all-hated Christian Russia.

The farther one walks about and sees the outraged fabric on all sides, the stronger becomes the feeling of grief. With indescribable emotion, one enters the resounding stone inclosure near the Cathedral of the Falling Asleep of the Mother of God. Here are still to be traced the stains of enormous pools of blood in which floated human fragments, tracked about by daring feet.*

* Many notes of personal experience and all the photographs of the Kremlin which illustrate this article were graciously given me in Moscow by my friend, Bishop Nestor, the distinguished missionary bishop of Kamchatka, who took them himself in the Kremlin by permission of the Bolshevik government.

PROCESSION OF THE FAITHFUL IN MOSCOW IN THE RED SQUARE, SHOWING THE WALLS OF THE KREMLIN AND THE CHURCH OF THE BLESSED BASIL IN THE DISTANCE

The revolution has brought intellectual Russians a long way from the cold indifference, the empty churches, and the forgotten traditions of their faith

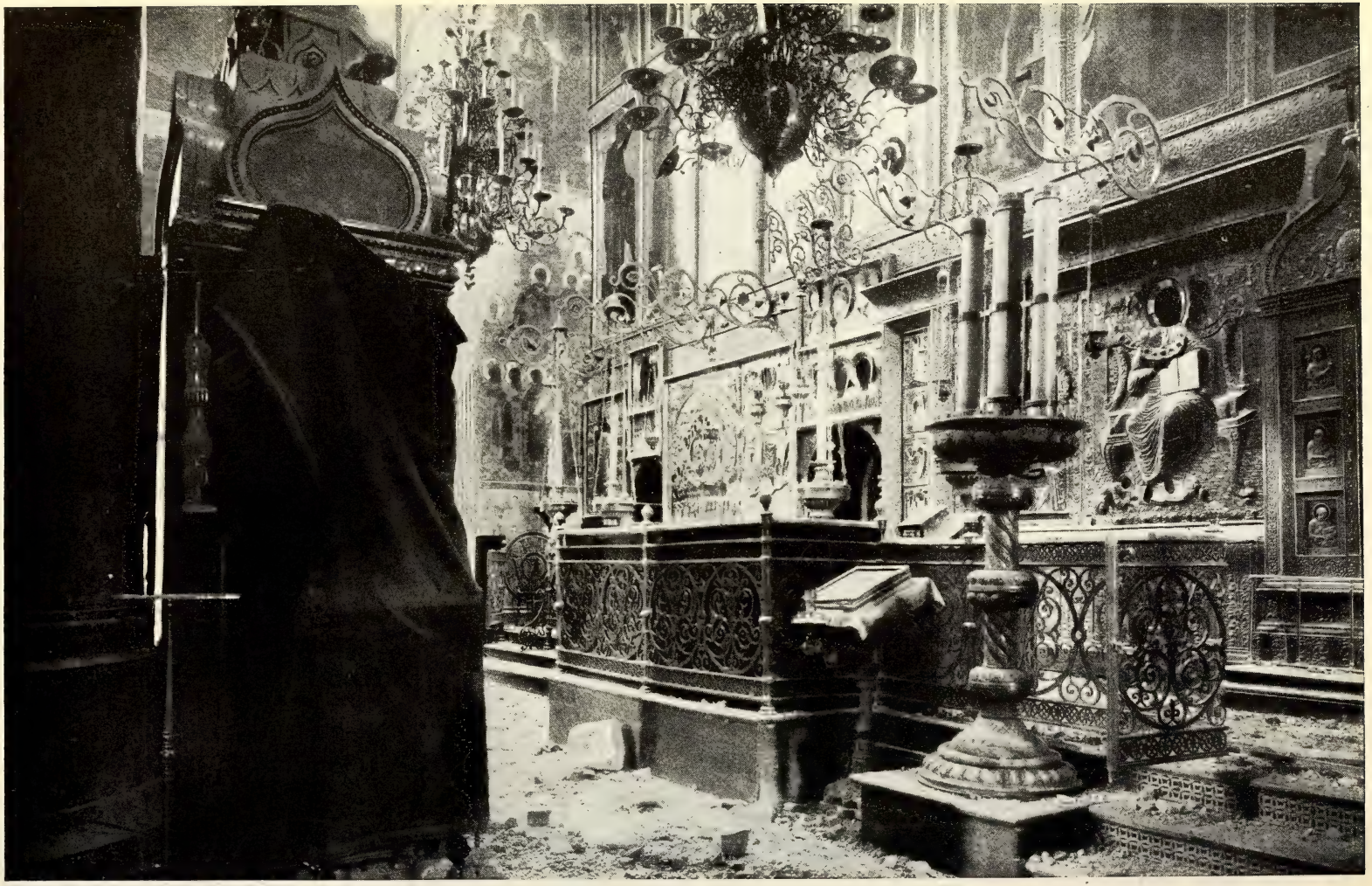
EXTERIOR OF THE USPENSKI CATHEDRAL (SEE PAGES 379, 390, AND 393)
Showing the shell hole in the central dome. In this church the Tsars were crowned.

The Cathedral itself has been badly treated. A shell struck its central dome and, bursting among the five domes of smouldering gold, viciously smote a second. The hole in the chief dome between the ghostly frescoes of the saints measures 7 feet in length and nearly 6 feet in width. In the drum of the dome is an ominous crack.

DEVASTATION INSIDE THE CATHEDRAL

The damage has not even yet been examined in detail by architects, and it is not known, therefore, whether such wanton devastation can be repaired.

The window glass is everywhere smashed or shot through. Within the Cathedral there are strewn about splinters of a 6-inch shell, which exploded there, and fragments of white stone, brick, and rubble. The gold and silver candelabra, those constellations among which all within the church seems to float through space, are bent as by storm; the Altar and the Sanctuary are strewn with broken glass, brick, and dirt; the Shrine of the



INTERIOR OF THE USPENSKI SOBOR, OR THE CATHEDRAL OF THE FALLING ASLEEP OF THE MOTHER OF GOD

Showing on the pavement the shattered fragment of the shell-struck dome. This great edifice, formerly the burial place of the Patriarchs, was built by Fioraventi, of Bologna, in 1475-79. Though repeatedly devastated by plunderers or fire, it has always been restored in its original form. Among its many relics were "the shroud of Christ, the robe of the Virgin, and a nail of the true cross" (see pages 370, 381, and 393).

Holy Martyr, Patriarch Hermogen, is covered with fragments of stone and rubbish.

This is the church built by Fioraventi of Bologna, in which the Tsars were crowned and in which the earlier Patriarchs were laid to rest. It is the precious reliquary of Russia's rich inheritance of the treasure of the ancient Eastern Church.

THE MARVELOUS EASTER SERVICE

In the days before the suppression of the Patriarchate by Peter the Great (see page 390), on Good Friday—or, as the Russians say, Great Friday—the Patriarch, in humble imitation of our Lord's entry into Jerusalem, rode on an ass from the Church of Blessed Basil, across the mosaic of fluttering doves, through the Gate of the Saviour, up to the Kremlin, but this year the new Patriarch, Tikhon, was forbidden entrance in the ancient way. Indeed, it was late on Easter Eve before His Holiness knew with certainty that he should be allowed to celebrate in his own Cathedral on the morrow.

In spite of the desecration, amid the ikon-clouds of steadfast witnesses to the faith, the Patriarch officiated at Easter.

There, on Easter Eve, for two hours before midnight, one hears the Acts of the Holy Apostles read. Meanwhile the lamps and candles, lighted one by one, swim like planets into our ken. The church swings in the shadows like a huge censer.

Then the gates of the sanctuary open and, in the vestments of royal purple, Patriarch, bishops, and priests, with silver and crystal crosses, like a torrent, flood the church with song: "Christ is risen!" they exclaim. "He is risen, indeed!" the people make answer.

The jeweled Gospels are thundered in different languages from the four corners of the church to all the earth. In the orchestra of voices the festival bell of the tower of John the Great companions the mighty voice of the archdeacon, Rosov, the Chaliapine of the Russian Church.

A HOLY MONASTERY OUTRAGED

It is all a vision of the forms and color of the Imperial Byzantine Court, in which the Church on earth pays her most splendid homage to Heaven.

A dreadful impression is produced by the present appearance of the Chudov Monastery, the "Wonder-working Monastery." The façade of the south side has been pierced by six heavy shells. In the rose-red walls are deep breaks and cracks and holes from 5 to 7 feet in diameter (see page 384).

Two shells broke through the wall of the Metropolitan's apartments, in which a member of the Council, Benjamin, Metropolitan of Petrograd, was staying. Inside the rooms there is complete destruction. Fragments of furniture are mingled with heaps of stone and rubbish.

In one room a shell pierced the immense, thick wall near a window and destroyed it as far as an ikon of the Mother of God which stood near, but the ikon and the glass over it and the lamp hanging before it were uninjured. The church in the monastery, where the relics of St. Alexis rest, did not suffer; only the windows were broken. The relics of St. Alexis had been carried to the catacombs church at the beginning of the firing.

There, beneath the low vaults, the Metropolitan, Benjamin; Archbishop Michael, of Grodno; the Prior, of the Chudov Monastery; Bishop Arsenius, the Elder Alexis, of the Zosimov Hermitage, and all the brethren offered their prayers day and night, under the unceasing rattle of the guns which shook the walls of the church.

GERMAN INVECTIVES MAR CHURCH WALLS

In the Church of St. Nicholas, in the belfry of the tower of Ivan the Great, a shell crashed through a window and destroyed the east wall of the interior of the Sanctuary. The large, magnificent old Book of the Gospels, which was placed against the ruined wall, was thrown to the floor near the Altar. The front cover was torn off, and the precious ikons of the Resurrection of Christ and of the Evangelists adorning the book were broken and thrown about; many leaves were torn and crushed.

The Altar of Oblation was broken and the service books torn. All over the Sanctuary bricks were scattered about, with splinters of shells and various eccle-

SHATTERED EXTERIOR OF THE CHUDOV MONASTERY, COMMEMORATING A MIRACLE OF THE ARCHANGEL MICHAEL (SEE PAGE 383)

This is one of the most celebrated monasteries in all Russia. It occupies the land which was given to the Metropolitan Alexis in 1358 by a grate-

siastical objects, heaped up between the Altar and the Royal Gates, but the Altar itself, in spite of its nearness to the ruin, was uninjured.

In the Church of St. Nicholas lies a part of the holy relics of the Prelate Nicholas, a saint honored by all Christians and even by the heathen. The walls of the entrance to this church are written over with the most filthy and sacrilegious inscriptions and invectives, not only in Russian, but (more significant of the leadership in all this despoliation) in German. The entrance of the church where the relics lie was used as an outhouse.

MADMEN DIRECT A RAIN OF DESTRUCTIVE SHELLS

When raining destructive shells on the Kremlin, the madmen evidently decided beforehand not to spare one of the churches; and, in fact, traces of the crime are left on all.

The famous porch of Lodgetti, of the Church of the Annunciation, from which Ivan the Terrible admired the comet, is destroyed by shot and shell. Miraculously, the age-dimmed interior of this remarkable little church is unharmed. The jasper floor which the Shah of Persia gave to the Tsar Alexis, the floor of many-colored jasper, like an Apocalyptic sea, binding the door-posts and lintels, set with precious stones, remains like a ponderous Byzantine cope-clasp.

The Church of the Archangel is scarred with the marks of shells. The Churches of the Resurrection and of the Deposition of the Robe, the oratories of the ikon of the Mother of God of Pechersk, and the Church of the Forerunner, in the Borovitsk Tower, domes like a garden of Hafiz, or Omar Khayyam, all fell beneath sacrilegious fury. The last-named church came in for severe usage, and some shots struck the ikons of the sainted Prelates of Moscow and of the Mother of God of Kazan.

DIAMONDS AND PEARLS IN RUBBISH HEAP

The Patriarchal Sacristy, containing treasures of incalculable value, has been turned into a heap of rubbish, where, among sand, rubble, fragments of the walls, and broken glass, the unholy hand digs for diamonds and pearls (see p. 387).

The worst devastation has occurred in Room No. 4, which was pierced by a bursting shell. Here several glass cases and cupboards with precious ancient covers, or palls, ornamented with gold and precious stones, were torn to shreds. Some memorial palls were pierced and completely ruined.

A book of the Holy Gospels of the twelfth century (1115), of the Grand Duke Mstislav, of Novgorod, was injured by a splinter. Various precious objects and ornaments of the Patriarchs, such as mitres, gauntlets, church utensils, vessels, and crosses, are all thrown out of the cases onto the floor and broken to pieces.

Another shell, in Room No. 6, destroyed a case containing Patriarchal vestments. The historical Russian ecclesiastical treasury, the noble monument of the past Patriarchal life of a great nation, is shattered.

Subsequently, after the Bolsheviks had assumed protection of the treasury and locked themselves into the Kremlin, these rooms were broken open and ruthlessly looted by some of their own company.

GEMS GOUGED FROM ORNAMENTS

In their haste to rifle the cases and in their indifference to the national significance of the treasury, these robbers wantonly ruined ecclesiastical ornaments by brutally gouging out the gems or ripping off their golden mountings, and by cutting out the jewel-studded medallions from the vestments made of ancient stuffs, in which weaver and goldsmith wrought with a mutual hand. Some of the treasure has been recovered, but most of it is either destroyed or irrevocably lost.

What hope is there for the safety of the Hermitage treasure brought from Petrograd in wooden boxes now lying in the Kremlin?

The Church of the Twelve Apostles is riddled with shot. Furrowed by shells and broken, its east end lighted by holes and cracks, it gives the impression of being held together by some miracle.

One shell pierced the wall from the south side, below the window, and burst in the church, causing much destruction; the standard candle-holders were broken and many ikons on the walls injured by splinters.

OUTRAGED AND DESPOILED

Broken and twisted candelabra, shattered windows, battered ikons, crushed and trampled-upon sacred vessels—such are the scenes which greet the eye of the worshiper in many of the "forty times forty churches" of Moscow today.

On a large crucifix, standing by the north wall, the outstretched hands of our Saviour were broken off. The figure was gashed with sharp bits of brick, and oil from the hanging lamps had poured over the whole. Red spots made a startling likeness of a living body covered with blood.

Some pilgrims who had succeeded in getting into the Kremlin, on approaching this sacred object, were unable to look at it and gave way to their grief, passionately embracing the feet of Christ crucified afresh (see page 388).

The little Nicholas Palace, which formerly belonged to the Chudov Monastery, suffered severely from the attack. From the outside, one peers into great holes in the walls. Inside all is complete devastation. The great mirrors and other furnishings of the palace have been barbarously demolished, cupboards broken into, and their books, deeds, and papers scattered through all the rooms.

The Church of Saint Peter and Saint Paul in the palace was pierced by shell and laid waste. The ikonostasis was broken, the Royal Gates forced open by

DESPOLIATION OF THE PATRIARCHAL TREASURY, SHOWING THE GOLD AND SILVER CHALICES (SEE PAGE 385)

Among the sand, rubble, shattered walls and fragments of glass, unholy hands rummaged for jewels which were knocked from their settings in sacred vessels

the shock of the explosion, and the curtain rent in twain. Many valuable ikons were stolen.

The Law Courts are knocked about, and the cupola of the famous Catherine Hall is pierced by shell. In the rooms of the experts or detectives, the fools of revolutionaries, coming upon the poisoned organs, abortions, etc., had devoured them because they were preserved in spirits!

The Nicholas Tower and Gate, where Napoleon, in 1812, broke the ikon of the sainted Prelate Nicholas, but which has remained uninjured since that time, has now been subjected to heavy fire and riddled with shot and shell (see page 391).

The case covering the ikon of St. Nicholas is ruined; the canopy above the ikon is broken and hangs by a nail. On one side the image of the angel is broken and that on the other side of the image is pierced.

The representation of St. Nicholas between has been preserved, but around the head and shoulders there is one continuous pattern of shot holes. At the first glance it seems that there is no ikon, but, on looking more carefully through the dust and rubble, there appears first the stern face of the saint, with a wound on

A GRIM MONUMENT TO REVOLUTIONARY SACRILEGE

Furrowed by shells and riddled with shot, this noble edifice, the Church of the Twelve Apostles, presents an even sorrier spectacle within (see page 385)

the right temple, and then the whole figure, considered always as the defense of the Holy Kremlin.

THE GREATNESS AND THE GLORY OF THE KREMLIN

The Gate of the Saviour was till now honored by traditional custom, where every one who went through, even the foreigner and the pagan, bared his head as a mark of reverence. Now no one enters here and armed guards stand smoking cigarettes, scolding the passers-by, and quarreling among themselves.

The famous clock with the musical chimes is shattered. The hands stopped at the moment when a heavy shell broke into the Kremlin wall and left its indelible trail of blood and shame on this hallowed heart of Moscow.

One would like, as so many have said, to open the Kremlin gates that all people, not only of Moscow, but of all Russia, might see the ruin of their sacred places.

What will wash away all the uncleanness, Russians ask, by which the Russian barbarism directed by the enemy has defiled the Kremlin?

It is impossible not to recognize that in the Kremlin are found the history of the art, moral strength, might, greatness, and glory of the Russian land. If ancient Moscow is the heart of all Russia, then the altar of this heart is the Kremlin.

A sacrilegious attack upon it could be made only by madmen or by men to whom nothing is holy and who are incapable of understanding (whatever Russia's future is to be) the significance and importance of this monument of Russian history. It cannot be considered a sufficient reason that the artillery fire directed against the Kremlin had for its object to crush the handful of officers and cadets who were within.

Not daring to approach, Bolsheviks searched for them with shell, injuring now the dome of the Cathedral of the Repose, now the Church of the Twelve Apostles, now the Tower of Ivan the Great, now the Chudov Monastery, and so on, in turn, almost to the last church.

Alas! This crazy fallacy is characteristic of the self-imposed government. What they did in the Kremlin they are doing today throughout Russia. One would like to believe that, if these men were once Russians, all consciousness of love for their country had been drained out of their hearts before their subservience to the enemies of all that is to a true Russian dear and holy!

Now these wounds have been bound up, as far as is possible, by merciful hands, as if bandaged, propped up by splints, and covered with sheets of iron, so that the winter shall not do still greater damage.

THE ORTHODOX CHURCH RISES FROM THE RUINS

A seventeenth century tale begins: "What man ever divined that Moscow would become a kingdom?" The twentieth century historian may wonder how the Kremlin could have been the target of such violence.

What further struggle and suffering await the Kremlin no one knows. No foreign eyes friendly to Russia remain in Moscow now to see.

The violent commotion which is shaking the life of Russia, typified physically by the wrecking of the Kremlin, is finding its first visible reaction in the reorganization of the Russian Church.

In the cities, where life courses more rapidly than in the country, the people, or a great part of them, are perceptibly returning to the Church, but in the villages a mental bias, which originated in the cities, amounting to an absolute denial of the Church's moral and religious teachings, is apparently prevailing. The peasant's faith is shaken, but the Intelligencia are again kissing the Cross.

The manner in which the revolution is affecting the Church, and its consequences with regard to external organization is already sufficiently clear.

From the middle of the seventeenth century two opposite paths opened before Russia: the path blazed by St. Serge and the path of Peter the Great. St. Serge's path led up to statehood in the moral consciousness of Russia. Peter the Great drove Russia into the establishment of an enforced empire held together by autocracy.

Peter, in his determination to centralize autocracy in Russia, placed at the head of the Church administration a *collegium,* to which was given the name of the Holy Governing Synod. This consisted of ecclesiastics of different grades, over whom, by Peter's decree, the reigning Emperor was instituted supreme civil judge. The Holy Synod was assisted by the presence of a High Procurator appointed by the Emperor, an official whose duty it was to see that the Synod's dispositions should conform to the laws of the State and to its interests.

The Russian Church has not since that day drawn a free breath. No ordinance of the Synod could be promulgated, unless confirmed by the secular authority. The ecclesiastical members of the Synod were appointed and summoned to take part in its labors by the Emperor alone.

When, in 1917, the imperial power was abolished, the Russian Church faced the question of organizing her administration afresh.

Under the past imperial régime, the secular element, in the person of the Em-

peror and of his representative, the High Procurator, assumed a predominance incompatible with the spirit of the canons of the Orthodox Church. There was danger that, as a consequence of the recent revolution, the head of the democracy might assume a like predominance. The only way out of this menacing situation was to convoke a council, which is the supreme normal organ of Church legislation, administration, and justice.

The Council assembled in Moscow on the 15th day of August, 1917. It was opened in the Church of the Falling Asleep (*Uspenski Sobor*), within the hallowed precincts of the Kremlin. The Metropolitan of Moscow, Tikhon, was elected President; the Vice-Presidents were the two Archbishops—Arsenius, of Novgorod, and Antonius, of Kharkov—and two presbyters, one of whom was Father Nicholas Lubeimov, chief priest of the army and navy, and two laymen—Professor Prince Eugene Troubestskoi and the President of the Duma, M. V. Rodzyanko; later Mr. Alexander Samarin was elected a Vice-President (see pages 379-382).

"WE WISH TO HAVE A FATHER"

The first question to be settled was this: should the Patriarchate be restored? Some of the peasant members spoke energetically to this end, declaring that such were the instructions from their constituents. One of them said, "We wish to have a father."

In Russia's present condition a declaration from the most numerous class of the Russian people possesses a peculiar weight; but the idea of the restoration was vigorously opposed by a group headed by the liberal professors and by several priests. When, however, a considerable majority declared in favor of the Patriarchate, the opponents received the decision calmly, and most of them set to work heartily to assist in its realization.

So the Patriarchate was restored. But it was not restored in the form it had in Russia in the sixteenth and seventeenth centuries. In those days the Patriarch was invested with excessive personal power, which did not strictly conform to the spirit of the Orthodox Church.

The Council narrowly defined the position of the Patriarch as that of "the first among equals," on a par with the other organs of the higher Church administration, the Holy Synod and the supreme Church Council, of which the Patriarch is president. He is awarded a position much like that occupied by the Patriarch of Constantinople, but with some extension of rights, compared to those given to the latter by the statute of his local Patriarchate.

THE ELECTION OF THE PATRIARCHATE

The election of the Patriarch took place during the time of the armed conflict in Moscow, when part of the city was cut off from the building in which the Council has its sittings. The election, however, took its perfectly regular course, a sufficient number of members being present.

Under strict observance of the rules for elections established by the Council, and with the participation of the members who represented all the Church elements, three candidates were chosen: Tikhon, Metropolitan of Moscow; Arsenius, Archbishop of Novgorod, and Antonius, Archbishop of Kharkov.

A few days later a solemn service was celebrated, after which three tickets bearing the three names were dropped into a special casket. Father Alexis (who is distinguishable by his black cowl and white beard and is sitting at the right in the second row of the Assembly, page 393), a holy monk and recluse, vowed to the solitude and absolute silence of the monastery of Zosimov (a dependence of the Troitsa-Sergian Laura), being thereto appointed by the Council, in the presence of the assembled people took out one of the tickets, on which was found to be inscribed the name of Tikhon.

As ordained by the Council, the Most Reverend Metropolitan Tikhon was at once proclaimed Patriarch of Moscow and all Russia. He represents the new birth of the free Russian Church, the new Father.

Two illustrations which accompany this article show the Council of the Sobor in session (pages 392 and 393). At the end of the hall, within the inclosure of

ST. NICHOLAS GATE AFTER BEING SUBJECTED TO HEAVY GUNFIRE

The case covering the ikon of St. Nicholas is ruined. The canopy above the ikon is broken and hangs by a thread. The ikon itself, just over the gate, has survived both the guns of Napoleon and of the Bolsheviks. On St. Nicholas' Day this year it was not only decorated with a garland of fresh flowers, but surrounded by a spiritual wreath of popular fervor (see page 387).

THE FIRST ALL-RUSSIAN COUNCIL OF FREE RUSSIA: IN THE CHURCH COUNCIL CHAMBER IN MOSCOW

The Patriarch and the Metropolitans are distinguished by their white cowls in the foreground. The members of the Council represent the national duma, the army and the navy, theological academies, academies of the arts and sciences, and of the universities. It is the most representative party of men assembled in Russia today (see page 395). The Council's sessions proceeded calmly, amid the violence and destruction raging on all sides.

THE CHAPEL AT THE END OF THE HALL IN WHICH THE COUNCIL SITS IN MOSCOW

The central figure is Tikhon, the Metropolitan of Moscow, who was elected President of the Sobor and later chosen Patriarch of all Russia. At his right is the Metropolitan of Novgorod and at his left the Metropolitan of Kharkov. From left to right are the Archbishop of Kherson, the Archbishop of Mogilëv, the Archbishop of Grodno, and the Metropolitan of Yaroslav, the Metropolitan of the Caucasus, the Metropolitan of Vladimir, the Archbishop of Tver. In the upper row, from left to right, are the Archbishops of Viatka and Kolonna and the Bishops of Tchernigov, Kaluga, Olonets, Kamchatka, Smolensk, and Nikolsk. To the left of the Metropolitan of Novgorod are two Vice-Presidents of the Council, Father Lubeimov and Prof. Prince Eugene Trubetskoi (see page 395).

MULTITUDES IN THE PROCESSION OF THE PARISHES ON ST. NICHOLAS' DAY IN THE RED SQUARE IN MOSCOW, MAY, 1918

The Bolsheviks know that their aims can be realized only on the ruins of the faith. The day had purposely been declared by the government to be a work day, but thousands came walking under the banner of the cross to the sound of Easter hymns.

the chapel, sit the Patriarch, the Metropolitan, the Archbishops and Bishops, the lay vice-presidents, and the secretaries. In the center sits Tikhon, the Patriarch, President of the Sobor. At his right is the Metropolitan of Novgorod, and just behind him Argafangle, the Metropolitan of Yaroslav, who, by the way, is the Russian Honorary President of the Anglican and Eastern Orthodox Churches Union. At the Patriarch's left are the Metropolitan of Kharkov and the Metropolitan of Kherson, and behind Kharkov are the Metropolitan of the Caucasus and the Metropolitan of Vladimir. They are all wearing the white cowl to distinguish them from the archbishops and bishops.

Opposite, facing the prelates, sit the other members of the Council. Speeches are made, not from the floor, but from a rostrum, on the left-hand side of the hall, facing the Assembly. The Council Chamber itself is on the second floor of the building.

The entrance hall below is the lobby of the Council, where members walk and talk together, often arm in arm, in animated discussion, and where laymen pause reverently to receive the blessing of Patriarch or Metropolitan.

Some of the bishops wear the Cross of St. George for valor on the field. In receiving the blessing a Russian opens his hands and puts them together and the prelate lays his hand in the open hands to be kissed after the blessing.

THE SANEST AND MOST DEMOCRATIC ASSEMBLAGE IN RUSSIA

The Patriarch, accompanied by a single footman, drives daily to the Sobor from his palace in an unpretentious carriage drawn by two black horses. He is often seen giving his blessing from the carriage window as he passes through the street, and there is generally a crowd of people pressing forward to receive his blessing at the door of the Council House.

The arrival of the Patriarch at the Sobor at 11 o'clock in the morning marks the opening of the session. The Assembly rises as he enters, "Many Years" is sung, and the House comes to order.

Although there are perhaps no conspicuously outstanding and dominant figures in the assembly, it reaches as a whole the highest level of the Russian mind. Here sit men from all districts. It is an all-Russian assembly. There are many strong personalities and many men marked by singularly beautiful and consecrated devotion to their task; nor is there evidence of a desire on the part of any one to dominate, least of all on the part of the Patriarch.

I heard no uncommonly stirring speechmakers, but a good deal of clear, cogent statement. It is because there is nothing noisy or spectacular about the Council that it evokes profound respect as the sanest and most democratic, as well as the most spiritual, body of men now assembled in Russia.

In contrast to the picture Titian has left us of the Council of Trent, all the sittings are open to the public. So republican is the Sobor in its character that visitors who happened to be present when these photographs were taken were requested not to leave the hall. I have had the advantage of knowing the Patriarch and many members of the Sobor and acquiring, in intimate relationships, a knowledge of their hopes for Russia.

The election of the Patriarch is the first act of constitutional Russia. It has a precedent in the history of the Russian Church. Although not foreseen by the canons, a similar example may be cited in the election of the Apostle Matthias, of which we read in the Acts. This manner of election answers to Russian ideals, and powerfully contributed to the joyful acknowledgment of the Most Holy Patriarch Tikhon as the person indicated by the will of God.

THE NEW PATRIARCH FORMERLY LIVED IN AMERICA

The man chosen to this high and responsible service is 54 years of age. In the world he was called Vasili Ivanovich Bellavin. He was born in the town of Toropetz, in the Government of Pskov, where his father was a priest. He was educated in the Church school of his native town, and later in the Ecclesiastical Academy of Petrograd. On leaving the Academy he was appointed master of dogmatic and moral theology in the Seminary of Pskov. In the capacity of teacher, he knew how to interest his pupils by his

excellent method of instruction. In 1891, while carrying on this work, he became a monk. During the next year, 1892, he was named Inspector, and soon after Rector, of the Seminary of Kholm.

In 1897, on being consecrated Bishop, he was elevated to the See of Lyublin, and in 1898, it is interesting for Americans to recall, he was translated to the North American diocese. In America he won universal respect and took an active part in the organization of the Russian Church in North America. It was in his time that the Episcopal See was transferred from San Francisco to New York.

From America he was translated to Yaroslav in 1907. The people of Yaroslav fully appreciated the goodness of their Bishop and elected him an honorary citizen of the town. After his translation to the See of Vilna (also in 1907) Bishop Tikhon, in his generosity, made many gifts to various charitable institutions. He remained in Vilna until 1917, when he was called to Moscow.

Wherever in the Province of God he has exercised his episcopate, Bishop Tikhon has proved to be exceptional in his simplicity, wide benevolence, and purely Christian character. A gentle, strong, learned man, he has written little. He has been rather a practical church worker, an accessible leader.

He compares with the Patriarch Philip, murdered under John the Terrible, and with Cranmer in England. It is therefore a great consolation for the Russian Church that, in these hard years of the life of the people, such a prelate should have appeared at the head of the government of the Church.

THE PATRIARCH'S WAY CARPETED WITH GOLDEN FLOWERS

The consecration of the Patriarch in the Kremlin was the first free act of the Church there after the fierce artillery fire of the Bolsheviks upon the Holy Places.

At the door of the Chudov Monastery, on St. Alexis' day of this year, a little group of the faithful were waiting for the coming of the Patriarch to say the Liturgy. In place of the usual carpet spread for his entrance to a church, some one, just before he came, simply scattered dandelions in flower from the fields. In the sunlight the broken steps suddenly became paved with gold and malachite. A delighted smile touched the face of the Patriarch, and one seemed to see in his anxious eyes a belief that in these spring flowers in the midst of all Russia's woe grew the symbol of new life for the Holy Church.

When the question of the Patriarchate had been settled, the Council proceeded to organize a system of Church administration, ordering that periodical councils should be held in the future.

An important matter decided by the Sobor before its Easter adjournment was the reorganization of parishes. The Sobor restored to the parish much of the independence which it had enjoyed in ancient times, but which had been lost in the growth of bureaucratic centralization.

The Sobor was also obliged to provide answers to many social problems. The Sobor and the Patriarch addressed epistles to the clergy, the people, and the army, to strengthen their spirit against the growth of pernicious influences from without, poisoning the life of the nation.

The actions of the revolutionary government, directed against the position and rights of the Church, met with the Sobor's resistance. The latter body protested against the confiscation of the parish primary schools and the schools which prepared for the priesthood; against the abolition of Scripture study in all schools, and against the abolition of Church rights of property.

The measures just mentioned, as contrary to the proclaimed principle of separation of Church and State, were considered by the Sobor as being acts of tyranny against the Church.

However, it was the Patriarch, and not the Sobor, who played the most important part in the general movement for the defense of Church rights.

His fearless epistles, addressed to the people, explaining the true significance of the measures adopted against the Church by the present rulers of the country, call upon the people to defend their faith and excommunicate the authors of the persecution. The Sobor upheld the Patriarch's authority as a representative of the Church in its relations with the outside world.

HIS HOLINESS TIKHON, PATRIARCH OF MOSCOW AND ALL RUSSIA

The new head of the Russian Church was at one time Bishop of the North American Diocese. It was in his time that the Episcopal See was transferred from San Francisco to New York. He was at the head of the Russian Church in this country from 1898 to 1907. A man of gentleness and strength, he focuses the forces of spiritual enlightenment in Russia.

THE PATRIARCH IN THE STREETS OF PETROGRAD, MAY, 1918

The Russian masses will never believe that the return to the Church means the revival of political and social oppression. They never confuse the eternal principles on which the Church rests with the passing political or social conditions.

THE PATRIARCH IN SOLEMN PROCESSION, PRECEDED BY THE ARCHDEACON ROSOV, THE CHALIAPINE OF THE RUSSIAN CHURCH, AND ACCOMPANIED BY OTHER PRELATES

THE PATRIARCH ON HIS FIRST VISIT TO PETROGRAD ENTERING THE CATHEDRAL OF ST. ISAAC'S

Each new manifestation of popular feeling and of the faith of the people indicates the great spiritual change which is taking place at the present time in Russia

It was a source of inestimable comfort to the devoted that the people ardently responded to the Patriarch's call and by peaceful mass demonstrations of their religious sentiments largely succeeded in putting a stop to the open campaign started against the Church.

THE CHURCH PROBLEM IN THE UKRAINE

In connection with the Ukrainian separatist movement, a group of Ukrainian public men raised the question of the separation of the Church of the Ukraines from that of Russia. It was decided to summon a special Ukrainian Church Council. As Regional Councils are provided for by the organization of the Russian Church, the Moscow Sobor did not protest against the summoning of a Sobor at Kiev, and the Patriarch sent his representative to Kiev with a message of greeting.

While the civil war which broke out in Kiev interrupted the work of the Sobor, tendencies were disclosed of a more moderate character than those advocated by the supporters of a complete separation from the Russian Church.

In the midst of the trials besetting the Russian people, mainly through their own guilt, the Church proves its vitality. It is now reconstructing its outer forms, which had greatly deteriorated during the past from Orthodox Church order. But outward forms are not vital; inner life is of far greater import. That source of inner life never ran dry in the Russian Church, in spite of the numerous defects of its outward forms, for the deficiency of which it often compensated.

Let there be no misgiving; the Church has aided Russia in every crisis. The Church which even in the nineteenth century produced such shining lights as St. Seraphim of Sarov and Father John of Kronstadt, besides hosts of others, that Church is sure to foster and develop its inner life, now that better conditions of external organization are secured.

In the present moment of confusion in Russia the Church is the only institution which stands on its feet. May not the example of the Sobor well pave the way in due time for a similar triumphant reconstruction of the Russian body politic?

AN IMPORTANT NEW GUIDE FOR SHIPPING

Navassa Light, on a Barren Island in the West Indies, is the First Signal for the Panama Canal

By George R. Putnam

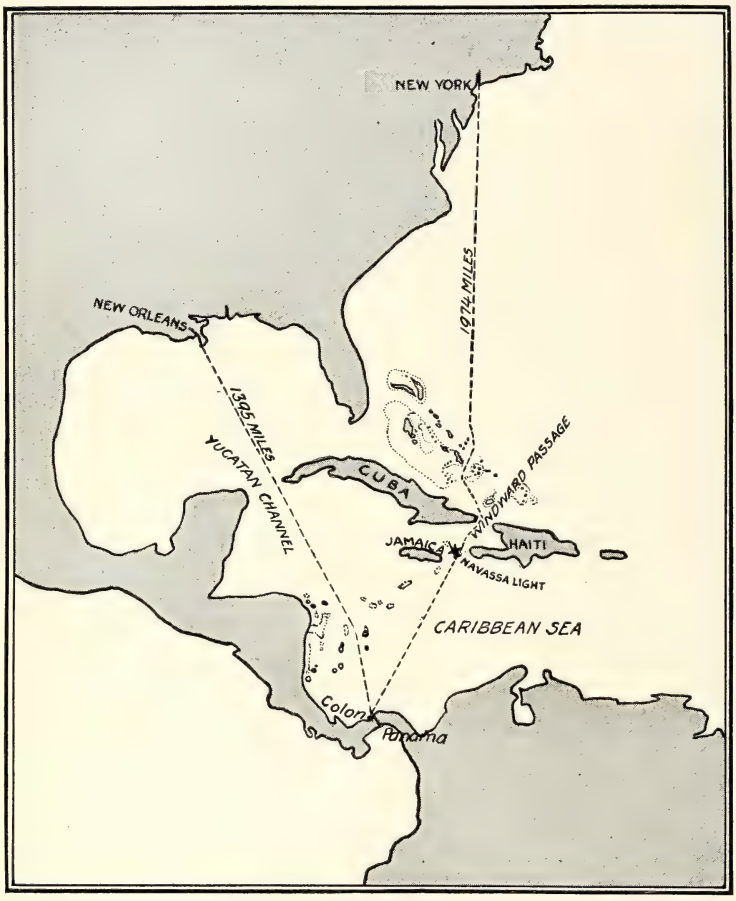
Commissioner of Lighthouses

LIGHTHOUSES and other sea marks are as necessary for the safety of traffic on the sea as are signal lights for the protection of railway travel.

It is interesting to note that there are waterways which are operated much like railways. Thus portions of the Detroit and St. Marys rivers, which carry the enormous traffic between the Lakes, have practically been double-tracked by dredging and marking separate channels for up-bound and down-bound vessels, and in some narrow parts of this passage a block-system has recently been introduced, so that by means of semaphore signals a vessel is prevented from passing until the preceding vessel has gone a safe distance. Similar systems are in use on important canals.

In normal times the shipping of the North Atlantic is operated on a double-track plan, with distinct lanes agreed upon for east-bound and west-bound vessels, and these lanes are for safety shifted to the southward during the iceberg season.

New York has a sort of four-track entrance from the sea, and of the four channels leading to the Narrows, the great Ambrose Channel is reserved for



SKETCH MAP SHOWING THE LOCATION OF NAVASSA LIGHTHOUSE AND THE UNMARKED SHOALS OF THE CARIBBEAN

Coral reefs and islets above water are shown by solid line, submerged rocks and shoals by dotted line

express and high-class traffic, and sailing vessels and tows are not permitted to use it.

WHERE OCEAN TRAFFIC LINES CONVERGE

The great increase in the shipping interests of this country and the building of the Panama Canal have attracted attention to a large area which is poorly provided with safety signals for navigation. The Caribbean Sea, once known to fame mainly by the exploits of the early buccaneers, is now a region where ocean traffic converges from north, east, and south toward the Panama Canal.

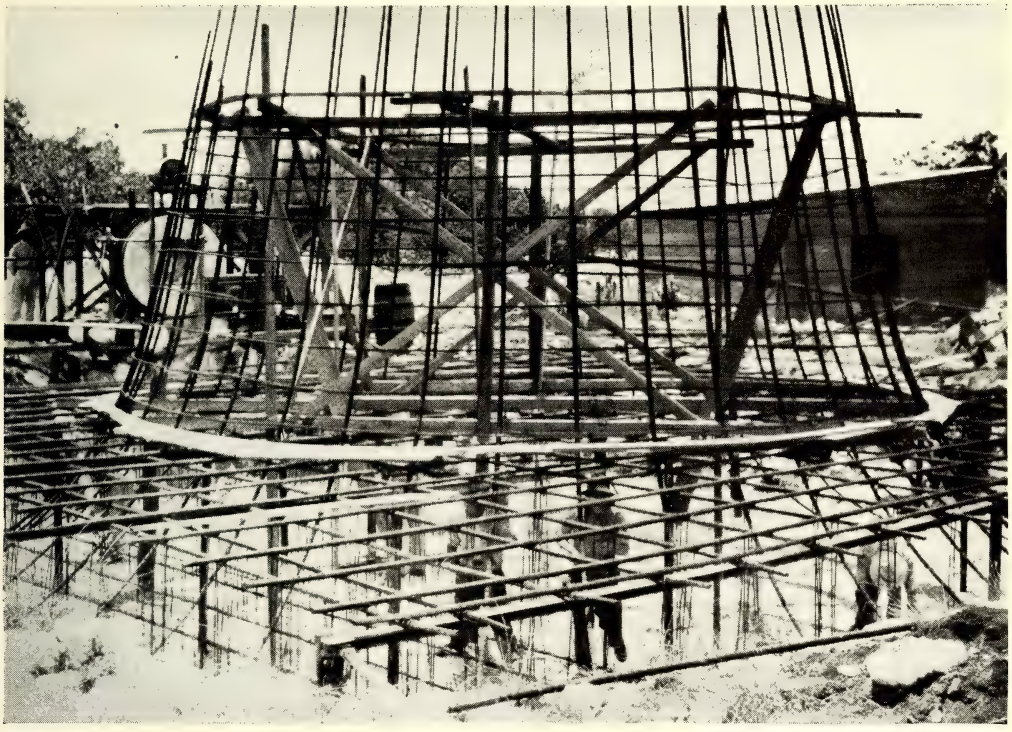
The northwestern part of this sea is strewn with rocks, coral reefs, and submerged dangers, unlighted and unmarked, a constant menace to shipping from New Orleans and the Gulf, which must pass through lanes between the reefs, and from New York and the North Atlantic coast, which must go close to several of these dangers.

On one of these dangers, Navassa Island, 600 miles north of Colon, the first signal for the Panama Canal has recently been placed. On this barren and uninhabited rock the United States Lighthouse Service has built a lighthouse of unusual type.

The main route to the canal from our Atlantic seaboard is between Cuba and Haiti, through the Windward Passage, and Navassa Island, lying between Haiti and Jamaica, marks the southern approach to this passage, and is the first landfall for vessels from Panama crossing the Caribbean Sea. The importance of its position with respect to shipping to and from the canal caused the United States to undertake the building of a light station of the first class on this inhospitable rock.

NEW LIGHT SWEEPS AN AREA AS LARGE AS DELAWARE

After many difficulties of construction, due to the inaccessibility and character of the island, on October 21, 1917, the light was first shown from the new concrete tower. Every night since then two beams of 47,000 candlepower have swept around the horizon each 30 seconds with clocklike regularity. Instead of a dark rock, which had loomed in the night in



Photograph by F. C. Hingsburg

THE BEGINNING OF THE CONSTRUCTION OF THE TALL LIGHTHOUSE, SHOWING THE STEEL REINFORCEMENT IN PLACE FOR THE FOUNDATION AND BASE OF THE TOWER

The steel skeleton, around which the concrete of the tower was poured, consists of 40 vertical steel bars, banded by a spiral of round steel bars, with loops one foot apart, wired to each vertical bar.

this passage, threatening mariners since the days of the early voyagers, these great rays now flash out friendly guidance to the seamen of all countries, regardless of nationality; the beams of this light have been seen 29 sea miles away, reaching nearly to the Haitian coast, and they sweep a sea area of about 2,200 square statute miles, as large as the State of Delaware.

Navassa light, on this rock in the center of one of the principal international sea passages and 500 miles from the American coast, is the most important lighthouse built by the United States in the last quarter century.

A TOWER TO WITHSTAND HURRICANES AND EARTHQUAKES

Navassa Island has the outline of an oyster shell and is slightly more than a mile in area. As the island rises fairly abruptly on all sides, forming a roughly flat tableland about 200 feet above the sea, it was necessary to build a tower 150 feet in height, in order that the light might "see over" the edge of the plateau and not be obscured to vessels in the vicinity of the island, unless close under the cliffs. The tower was placed on the highest part, bringing the light 395 feet above the sea.

The lighthouse tower was designed to withstand West India hurricanes as well as earthquakes, and the lower sections have massive proportions, the base being 25 feet in diameter, with walls over 6 feet thick. It is built of reinforced concrete, one of the tallest towers yet constructed by this method; it is of simple and dignified design, bell-shaped at the base, and above that a simple cylinder to

Photograph by Thomas Sampson

NAVASSA ISLAND LIGHT STATION, WEST INDIES: SCHOONER IN LULU BAY UNLOADING SAND

A little nook called Lulu Bay, with the schooner moored to the cliff; this is the only landing place available on Navassa Island. All the supplies and material for the lighthouse construction, as well as the workmen, were brought to the island by this little schooner, which was the only means of transportation for the year and nine months that the work was in progress.

the watch-room gallery. The use of this structural material has resulted in a much more slender outline than has been necessary in masonry lighthouses.

Almost everything required for this work had to be brought from a distance; the skilled employees were sent from the United States, together with all special supplies and equipment; the laborers came from Cuba and Jamaica, and it was even necessary to bring from Jamaica all the sand and most of the water used in construction.

The nearest ports were Guantanamo, Cuba, 90 miles, and Kingston, Jamaica, 110 miles distant. No good landing ex-

Photograph by F. C. Hingsburg

NAVASSA LIGHTHOUSE

Built by the United States Lighthouse Service, of reinforced concrete, on an uninhabited island in the West Indies. The concrete tower is 150 feet in height. The dwelling for the keepers is shown to the right.

ists on the island, so that the little schooner that was used to bring supplies and men had to be moored under the rocky cliffs, when weather favored, and the cargo hoisted onto the shelf above; this small craft had narrow escapes from hurricanes, and there were many days when it was impossible to land.

On one occasion, after being damaged in a storm, the schooner with her load of supplies put back to Jamaica, and there was apprehension as to the food on Navassa, but this reassuring report was received: "The last flour was used for making bread on Friday. There were sufficient rations on hand to last through Sunday, and with goats, wild pigeons, fish, etc., together with a pig and a number of chickens which are kept here, we were in no serious predicament."

An unusual feature in lighthouse building, a radio equipment, much facilitated construction.

Men quickly tired of the monotonous life. On account of climate and difficulty of transportation, very little fresh food was available, and the workmen persistently grumbled. The excessive heat soon diminished their efficiency. The transportation of materials from the landing place to the site was a most burdensome task, as this had to be done largely by men shoving the loaded cars on the work railway.

ISLAND RESEMBLES A PETRIFIED SPONGE

Navassa is one of the strangest pieces of territory owned by the United States. It is a remarkable formation of volcanic limestone, completely riddled with holes and pockets, some of great depth and having no visible bottom. These holes are so numerous that one can walk only with great difficulty.

There is a total absence of water, and no watercourses or lakes, as rain is immediately absorbed by the cavities. The whole island has the appearance of a great petrified sponge. There is a growth of stunted trees and underbrush on the high plateau, and the island has some animal life, wild goats and wild cats, doubtless descended from those brought here when the island was occupied, and numerous seabirds and land-crabs.

UNITED STATES' TITLE TO ISLAND RESTS ON MURDER-TRIAL DECISION

It is a curious fact that the title of the United States to Navassa Island rests on the decision in a murder trial. Although uninhabited and long abandoned at the time the lighthouse work was undertaken, Navassa was for some years actively occupied. The pockets and surface of the island contained a large deposit of a phosphate earth and guano.

Under the guano act of 1856, one Peter Duncan presented a memorial to the Secretary of State stating "that on the first day of July, in the year of 1857, he did discover a deposit of guano on an island or key in the Caribbean Sea not occupied by the citizens of any other government, and that he did take peaceable possession of and occupy said island or key of Navassa in the name of the United States." These deposits were worked by a company for a number of years, up to 1898, and the ruins indicate an elaborate plant for this purpose.

In 1889 about 150 men were employed on the island, and on September 14 of that year a riot occurred, in which the superintendent and several of his assistants were killed. The frigate *Kearsarge* took the murderers off the island and they were tried in Baltimore.

The defense set up the plea that the island was not an American possession and that the court had no jurisdiction, but the Supreme Court denied this plea and the murderers were executed.

A concrete dwelling, in the Spanish tyle, with a large open patio in the center, furnishes comfortable quarters for the families of the three keepers who carefully watch this, one of the loneliest of the sea signals of this country. They see many a passing ship, but can expect supplies and mail only when the supply steamer visits the island, a few times a year.

The matter of marking other dangerous reefs of the Caribbean Sea for the protection of the increased shipping is now receiving special consideration.

COAL—ALLY OF AMERICAN INDUSTRY

Following the Nation's Annual Output of 735,000,000 Tons of Fuel from Prehistoric Ages to Its Arrival at Tidewater

By William Joseph Showalter

ONE who has not wandered through the seemingly endless reaches of the innumerable man-made caverns of the coal regions, and there studied first hand the tremendous industry of harvesting the solidified sunbeams planted for humanity by a bounteous Providence in the Carboniferous Age, cannot appreciate the vastness of that industry nor its meaning to the American people.

To see them gathered at the rate of more than two million tons a day, transported hundreds of miles, and then, under the alchemy of science, transmuted into a thousand forms—heat for the fireside, light for the darkness, motion for the railroad train, power for the factory, fertility for the soil—is an illuminating lesson, showing how man, the creature of Nature, through science makes her wonderful forces his servants.

Under his touch coal becomes comfort in the home or death at the battle front; yields a corrosive acid that burns like fire or a sweetness that makes sugar seem insipid; gives off a gas that smells like a bad egg, but is as harmless as a chicken; is transformed into colors that make the rainbow envious of their brightness and variety, and into explosives that make the thunderbolt jealous of their power.

THE MAGNITUDE OF AMERICA'S COAL NEEDS

The first thing that impresses one who studies the coal situation in America is the well-nigh inconceivable proportions of the nation's demands for fuel. The government estimates that the requirements for the current year will reach the enormous total of 735,000,000 tons.

So huge is this figure that it were almost as futile to use tons as units as to measure the distance around the earth in inches. Even the number of carloads mounts so far up into the millions that they become meaningless, and trainloads are only a little better.

About the only way in which one can visualize this demand is to build a mental bin capable of holding enough to meet the national need. If this bin be made with each of its four sides measuring a thousand feet, it will have to be more than thirty-three thousand feet high—overtopping Mount Everest, the tallest mountain in the world, by nearly a mile. Or, if the fuel were put into a coal pile of normal slope, with a base of twenty feet, that pile would have to be 96,000 miles long—nearly four times around the earth.

Little less startling than the size of the national demand for coal are the proportions of the excess requirements of war times over peace times. Taking the average annual demands of peace times and comparing them with the demands of the past year of war, one finds that the extra coal required in the United States as the result of the war reached a total of 210,000,000 tons.

Here again the brain reels in its effort to comprehend the meaning of such vast figures. They mean an excess tonnage amounting to 4,333,000 carloads. These cars would require a string of engines nearly a thousand miles long to pull them and would form a train which, moving at a uniform speed of twenty miles an hour and never stopping, would require seventy-five days to pass a given crossing.

ARMY OF MINERS NOT GREATLY REINFORCED

And yet the force of miners upon which devolved the task of meeting this almost unbelievable increase in the na-

Photograph by J. Horgan, Jr.

BENEATH THESE BARE ROCKS LIE THE SOLIDIFIED SUNBEAMS STORED BY PROVIDENT NATURE FOR RESOURCEFUL MAN

It is only during a few centuries that coal has been used to any extent, although Roman mines in England point to its use in those times. William Penn paid $2,500 for the anthracite region. Coal already taken out has had a tidewater value of seven billion dollars, and there are five tons in place for every one thus far removed. Ninety-eight years ago the total shipments from this region were only 365 tons. Now the production is 90,000,000 tons per year.

tion's requirements was very little, if any, larger than in peace times. Tens of thousands of miners had left the coal fields for the factories or for the battle front, and with all the high wages paid, it was next to impossible to maintain the army of anthracite and bituminous workers at peace-time strength.

Let us go into the coal region and down into the mines and see the sturdy harvesters reaping the grain of heat that Nature stored up against the day when the forest should find itself unable to supply mankind with fuel.

THE ANTHRACITE FIELDS

We will first visit the anthracite fields, that wonderful region in Pennsylvania which lies to the north of Reading, to the south of Carbondale, east of the Susquehanna and west of the Lehigh rivers. Scranton and Wilkes-Barre are the center of the upper field, Hazleton of the middle field, and Pottsville of the lower.

Were all of the coal beds in this remarkable region laid out in a compact body, they would cover an area only twenty-two miles square. Yet out of such a small area have come billions of tons of coal and culm, the former to cheer a million firesides, and the latter to dot every landscape, and to serve as monuments to remind us of the patient toil of hundreds of thousands of men through scores of years.

A visit to a modern colliery is an impressive experience. Depending on its size and the labor available, it will bring from one to two full trainloads of coal up out of the bowels of the earth every day, put the coal through the breaker, where the sheep of fuel are separated from the goats of slate and culm, and load it into the cars ready for market.

We shall be safe even if we do go down a thousand feet into the earth and roam about in an underground plantation whose area may be judged by the fact that there are eighty-five miles of railroad track in it. The colliery superintendent, a rare old Welshman who has been mining coal for twenty years, and the district engineer, a fine youngster who has had his engineer degree from Lehigh, will accompany us.

There are some things on top of the ground that will be even more interesting to us when we go below—particularly the hoisting engine and the ventilating fan, for without the one we would not be able to ride back to daylight, and without the other we would stand a chance of being "gassed" over here in peaceful America

HOW A MINE BREATHES

The giant fans fly around with a rim speed of a mile a minute, two of them, with a third in reserve for emergencies. If it were not for those fans the air in the mine would become so laden with gas and dust that if it did not explode and transform the whole mine into a charnel-house, it would develop choke-damp and suffocate us. These fans are to the mine what the involuntary muscles of the chest are to the lungs—they make it breathe.

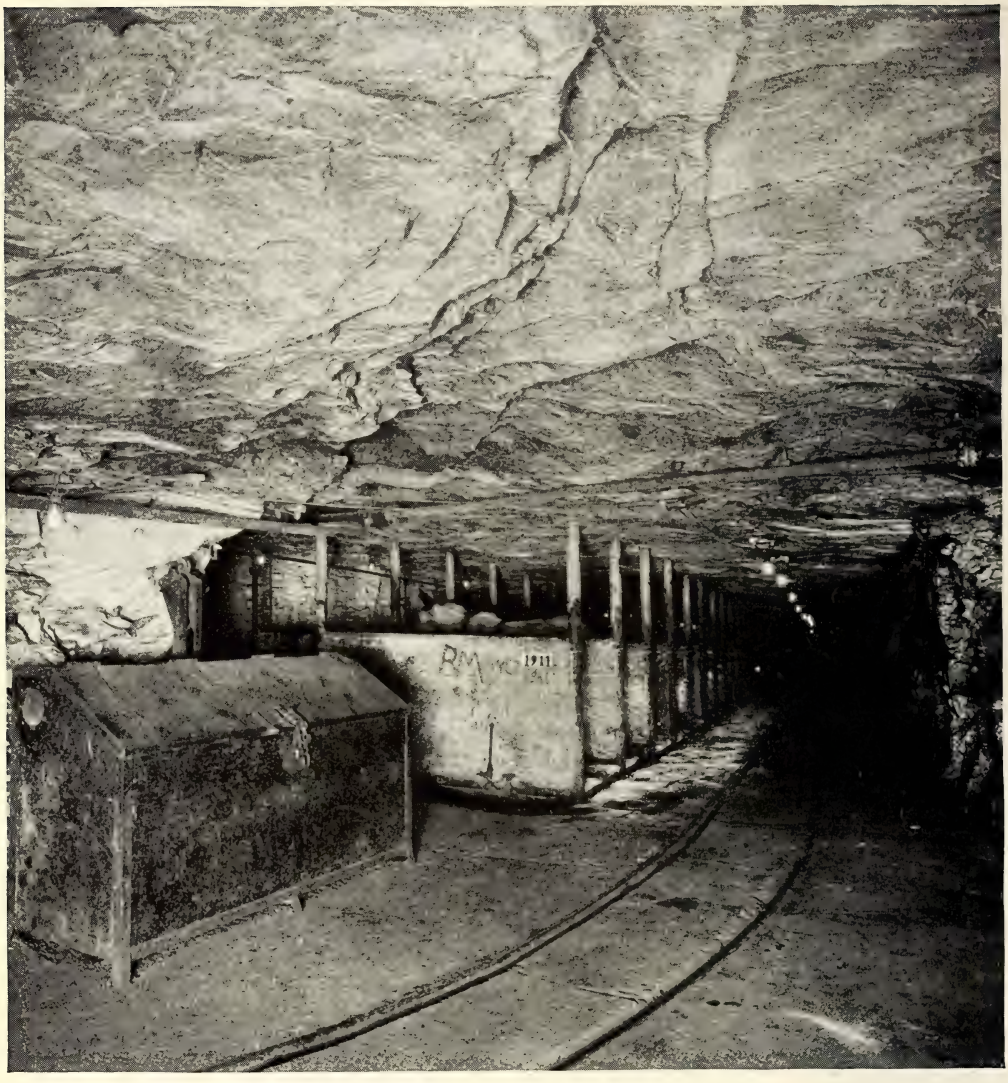
Every mine has two shafts—the hoisting shaft and the air shaft. In order to keep the air in the mine free enough from gas to permit miners to work in safety, enormous quantities of fresh air must be sent down the one shaft and corresponding quantities, gas-laden, drawn out of the other.

In America this is usually accomplished by exhaust fans drawing the used air up the air shaft. This type of fan tends to make a vacuum at the top of the shaft, and the weight of the atmosphere drives the fresh air down the hoisting shaft and the stale air up the other.

If that which goes down the hoisting shaft were allowed to take its natural course, it would make a bee-line for the air shaft and rush up into the fan-created vacuum at the top. That would leave the foul air in every other part of the mine and accomplish no great good.

So, means have been found to lead air around a mine just as effectively as one might lead a horse. By the use of doors and curtains and bridges, the mining superintendent is able to take the current of air that rushes down the hoisting shaft and make it move here and there, hither and yon, into every nook and cranny of the mine, driving the foul air before it as it goes. It seeks out every gas pocket and forces itself into every chamber.

It may very well be imagined that a mine with enough tunneling to call for 85 miles of railroad track needs a great deal of air, and that this air, to reach



THE MULE STABLES IN A COAL MINE

Often down a quarter of a mile in the earth are stables kept as clean and as sanitary as a race-horse barn. The mule is brought down the shaft in the cage, or elevator, blindfolded, and he stays down below until he dies, or is rendered "hors de combat" by accident. If he is sick there is a "barnyard" covered with white sand—the only touch of white to be seen—where he can roll and rest to his heart's content.

every part, must cross its own path many times, just as a man, covering all four sides of every block in a city, would have to cross his own tracks. In the mines this is accomplished like a railroad crossing by bridge instead of at grade. When a crossing point is reached, there is a tunnel opened up through the solid rock above the roof of the mine, and through this the air rushes at right angles to its former direction.

To get the air properly distributed, it is necessary to make splits, so that the current can be divided and sent into different sections of the mine. These air splits are doors which permit only half of the air coming their way to pass. The remainder must find some other way through.

Photograph from U. S. Bureau of Mines

LINING A MINE WALL WITH ARTIFICIAL ROCK

One of the frequent causes of mine cave-ins is the weathering of the slate of the roof and side walls. It gradually crumbles or scales off and suffers a consequent weakening, which may finally bring disaster. The cement gun covers the slate with a thin plaster, which effectually shuts out the air and leaves it as unexposed to deterioration as it was during the countless ages before the coal was removed.

Before going down into the mine the superintendent will give us each a miner's lamp—at this particular mine the lamp is a tiny teapot affair containing sperm oil and with a spout full of cotton yarn. Also, he will equip us with electric hand-lamps, to be used in any emergency. Then he will stick an extra ball of yarn in his pocket and we will start for the "cage," which is the mine name for an elevator.

THE DESCENT INTO ANTHRACITE

We step on, he presses a button, and the hoisting engineer is notified that we are ready to go down. Suddenly the cage seems to drop; then it seems to stop, and the walls of the shaft appear fairly to fly upward past us. Up, up, up they fly, disclosing this stratum of rock and then that.

Arriving at the bottom, we soon find that a coal mine is planned like a city. There is one main street, or entry, and it has been laid out with the nicety of a grand boulevard. Parallel with this are other entries, and across these entries run other streets, at right angles, usually, which are called headings. Lining all these headings as houses line the streets are the chambers, or rooms, in which the miners work.

When we stop at the bottom we feel ourselves in a small-sized hurricane. It is the air rushing down the shaft and starting through the mine on its mission of purification. Setting out down the main entry, along a railroad track, we soon hear a clanging bell and a whistle, and presently there looms out of the darkness a yellow light. As it approaches, we see the outlines of what appears to be a

Photograph from U. S. Bureau of Mines

UNDERCUTTING A BREAST OF COAL WITH A COMPRESSED-AIR PUNCHER

There are many types of cutting machines for overcoming the wasteful methods of "shooting from the solid" or blasting the coal loose without cutting around it first. Some are driven by compressed air, some by electricity, some by steam generated on top of the ground. One cave-cutter is not unlike a mowing machine. A cutter-bar reaches out from the driving mechanism and has, instead of pitman-operated sickles, an endless chain revolving around sprocket wheels. On this chain coal knives or picks are fastened, and as they travel along they cut away the coal. When a cut, such as the one being made in the illustration, is finished from one side of the chamber to the other, holes are drilled and light blasts put in

long, round boiler creeping along the rails; but in reality it is a compressed-air engine—for compressed air, rather than electricity, is the haulage power in this mine.

Upon the surface there is a great air pump that keeps crowding the molecules of air together closer and closer until they push away from one another with the strength of a thousand pounds to the square inch. Think of thin, invisible, imperceptible air being packed so tight that it tries to burst out again with a strength that would make a Samson seem a weakling! Put a cubic foot of this air into a cask and the pressure on the sides would be 432 tons.

KEEPING TAB ON THE MEN IN THE MINE

When the miners go down to their work in the morning they are checked in by the "fire boss." He is a foreman who has charge of fire prevention and of the safety of the miners while at their several tasks. During the night every section of the mine has been inspected to see whether there is gas anywhere. If there should be an entry, a heading, or a room that is laden with gas, the fact is noted on a slate which is exhibited to the men as they file past. If there is no gas, it is said that the day starts with a clean slate, which is both figuratively and literally true.

The brass check of every miner who enters the workings is taken and hung up on a board, opposite the number of the room in which he is digging coal. If he has a helper, his check—somewhat different—goes up too; and if there are two men working as partners, that fact is shown on the board also.

By this careful checking system the location of every miner and every helper in the mine is known all the time, and in case of explosions, fires, or falling walls the management always knows who is in and who is out.

We walk and walk until we begin to feel as though we might be coming out over in China or France, and then we come to the rooms or chambers—for all the coal in the neighborhood of the hoisting shaft has gone up in heat and smoke long before now and this mine is far-flung.

These rooms or chambers might be monks' cells in some catacombs for the living. Here the miner bores and blasts and digs away the coal and loads it into the mine cars. If he has a helper he does not need to do the loading himself, but in these latter days helpers are not much in evidence. The car holds about 6,000 pounds of run-of-the-mine coal, and a miner is supposed to fill two of them a day.

When the car is loaded the miner puts his number on it, and presently, with much ado, there comes up the heading and into the passageway leading to the chamber a string of mules walking tandem, or single file, and dragging an empty car behind. They pull out the loaded car, set the empty one where the miner wants it, and go back the way they came, with the load of coal.

There are other strings of mules, also, and they distribute the empties and mobilize the loaded cars from and at given points. Then the compressed-air engine comes along and makes up a train of loaded cars after dropping one of empties ready for distribution. The coal trains are pulled down to the hoisting shaft, and one by one the cars go to the surface, an empty coming down as a loaded one goes up.

THE DANGERS A MINER FACES

The dangers the miners have to encounter are many. Their work is individualistic and solitary. Who knows whether they are careful in handling their explosives? Who knows whether they keep a proper watch for signs of gas? And yet one careless miner in one little chamber may start a conflagration that will sweep the mine and make scores of victims. He may disdain to screw off the cap of his powder can and pour out the powder in a safe, orderly way, preferring to cut a jagged hole in the top of the can with his pick and to pour out the powder through it. He may disdain to tamp his charge home with clay and may use a lot of paper and coal dust instead. All that goes very well until there is fire-damp present, and then—and then the world may read, in newspaper headlines across the page, of a terrible disaster.

Photograph by J. Horgan, Jr.

A JACKHAMMER DRILL AT WORK, DRIVEN BY COMPRESSED AIR

With one of these machines a miner can drill as many holes in one hour as he could in eighteen with the old-fashioned hand drill

Photograph from U. S. Bureau of Mines

TAMPING HOME THE BLAST

Having drilled his holes in the "breast" of coal in his "chamber," the miner is now ready to blast down several mine-car loads. It is back in these places that the mine fires so often begin. One miner, careless and indifferent, may undermine every precaution and safeguard that can be taken and provided by the company and all the other miners together. And the pity is that often familiarity with gas and powder and fire breed contempt for their dangers, with the resultant horrors of a mine disaster (see page 413).

Photograph by J. Horgan, Jr.

ELECTRIC MECHANICAL LOADER

Once every operation between the unmined coal in the seam to the loaded mine car was done by hand. But the mechanical age has dawned even in the depths of the earth, and with jack-hammer drills, coal-cutting machines, and mechanical loaders the individual output of the average miner is increasing. Mining machinery is in the harvest fields of heat what the self-binder is in the gathering of grain.

THE THREE DEADLY MINE GASES

The three principal gases encountered in mines are choke-damp, or carbonic acid gas; fire-damp, or marsh gas; and after-damp, or carbonic oxide gas. Choke-damp is heavier than air and settles in the lower parts of a mine, just as water seeks the lowest level. It kills by suffocation. It may be dipped up with a bucket like water, and its presence may be detected by lowering a light into the cavity where it exists, as it will put out the flame immediately. Individual miners are killed by it, but it never explodes.

Fire-damp is a most peculiar gas. If you mix less than 85 per cent of air with it or more than 95 per cent of air, it will burn but will not explode; but if it be mixed in the proportion of 88 or 89 parts air to 11 or 12 of fire-damp, the combination becomes one of the most terrible of explosives.

Photograph from U. S. Bureau of Mines

HOW NOT TO PREPARE A BLAST

This miner, pouring powder out of a jagged, pick-cut hole in his can, while his cap lamp burns brightly, is not only taking a chance with his own life, but with that of every other miner in the workings. This is a picture of what the miner should not do. But thousands of lives have been sacrificed by just such methods.

Eternal watchfulness is the price of safety. When the coal is blasted down, fire-damp pockets are often opened up, and the thin, trickling, hissing sound tells the miner what has occurred. Miners test the chambers, headings, and entries for fire-damp with a lamp. If the blaze becomes elongated and blue at the base, that gas is present.

An explosion of fire-damp is one of the most terrible disasters that can occur in a mine. In an instant the dark, man-made caverns are lighted up from end to end by a lightning that beggars description. "The expanded gas drives before it a roaring whirlwind of blazing air," as one who has survived the catastrophe tells us, "which tears up everything in its progress, burning many a miner's body to cinders, entombing others, and, rushing to the shaft, it wastes its fury in the shower of dust and stones and timbers it blows high into the air."

A tragic story might be written of mine disasters which fire-damp has caused and of the tens of thousands of miners who have given up their lives in such holo-

Photograph by J. Horgan, Jr.

AN ELECTRIC LOCOMOTIVE MOVING A MINE TRAIN

Many a mine mule has hee-hawed with delight as his life sentence to hard labor in an underground prison has been commuted by the arrival of electric transportation. The sharp-nosed sticks in the foreground are "sprags" to be stuck between the spokes of the car wheels to brake or "scotch" them. They have left their imprint upon the vernacular of the coal region, since to "sprag" a scheme is effectually to block it.

causts; but as the years go by greater care is used, better ventilation is maintained, and the disasters, happily, are growing fewer.

After-damp is one of the deadliest of all gases encountered in mines, but fortunately it does not occur except following fires. It is so subtle that the miner is powerless to escape its attack when he realizes its presence. Odorless, or possessed of a mere hint of violet, its victims experience an exhilaration at its onset that seems to them only a sensation of feeling unusually well; but so quick and deadly are its effects that before this feeling passes, the victim is wholly within its grasp.

HAND METHODS PRODUCE ANTHRACITE

In the anthracite region mining is still done principally by hand. Some jack-hammer drills have been introduced and some electric coal-cutting machines; but hand methods still produce most of the anthracite. The jack-hammer drill is an instrument which bores the blast-holes by power. With one of these drills a miner is enabled to bore as many holes in one hour as he can bore in eighteen with a hand-drill. Among the illustrations of this article (see pages 414 and 416) will be found pictures of cutting machines, jack-hammer drills, mechanical shovelers, etc.—labor-saving machinery that is now working wonders in the productive powers of the miners.

If space permitted we would follow our fine old Welsh guide up into the "kidney" of the mine and see a second layout of entries, headings, and chambers in a half-way station seam; we would contrast the new steel timbering of the mines with the old wood timbers coming from the South; we would stop to look at the mule stables, as clean and as sanitary as any stables you ever saw, with a sand-floored yard, where the sick ones may roll and rest to their hearts' content.

But let us follow the coal up the shaft, and through the breaker in the case of anthracite, and through the tipple or dumping house in the case of bituminous.

When we reach the top again, we note the layout of the breaker plant, where the coal is cleaned and sorted into the several commercial sizes. The first thing that impresses us is that the mine-owners are almost as careful in saving coal as a miser is in hoarding his gold.

The loaded mine cars are rolled off the cage by hand, and the breaker building is so situated that the cars run down to it by gravity. As the cars roll down to the breaker hoist, which may be either a vertical lift or an inclined plane, boys "sprag" or "scotch" them and let them down to the hoist one by one.

Going up to the top of the breaker, we see the coal as it comes from the mine, with all its slate and culm, mechanically dumped, a carload at a time, upon the oscillating bars, which begin the process of separating the coal from the worthless material and the assorting of the former into groups according to size.

There are eight different sizes of coal now in general use—broken, egg, stove, and chestnut, which are the domestic sizes, and pea, buckwheat, rice, and barley, which are steaming coals. They range from four inches in diameter for broken to one-sixteenth of an inch for barley. Of course, there are as many pockets at the railroad tracks as there are grades of coal produced in a breaker, and as many chutes into the cars as are necessary to load every grade simultaneously.

After the "bony" coal passes through the crushers and is broken up, it joins the procession of unseparated slate and coal down the several chutes. At one place it runs through a centrifugal slate picker, which is a striking contrivance that does the work of a jig in another type of breaker.

There are dry breakers and wet ones, but this has no reference to the presence or absence of prohibition. Dry breakers are those where the coal comes from the mine fairly clean and goes through the breaker without being watered, either for the suppression of dust or for the washing of the coal.

Also, there are breakers which separate the slate and culm from the coal by jigs rather than by centrifugal pickers. In these the coal as it comes from the mine is "jigged" up and down in water. The coal settles more slowly than the slate and culm and can therefore be skimmed off like cream from milk.

In order that the miners may not be

Photograph by J. Horgan, Jr.

THE INCLINED-PLANE ELEVATOR OF AN ANTHRACITE BREAKER

When the loaded cars are brought out of the mine they drift by gravity to an inclined plane. There a "barney," attached to a cable, pushes them to the top of the breaker where the coal is dumped. Then the cable is reversed and the barney acts as a brake in returning the cars to the bottom of the incline.

Photograph by J. Horgan, Jr.

ONE OF THE LARGEST COAL BREAKERS IN THE WORLD: KINGSTON, PA.

The coal comes in at the rear of the breaker, on the top-story level. It wanders this way and that, first down this story and then the next, finally reaching the bottom minus its slate and dirt and separated into every size, from "broken" to "buckwheat."

tempted to load too great a proportion of slate, there is a "court-house" at every breaker. The men are normally allowed 7 per cent for slate, but sometimes, when in a hurry to get a car loaded, they throw in a larger proportion of refuse.

But they never know when one of their cars is going into the "court-house." This is a side track where an inspector examines the coal to see whether it is running to the proper percentages or not. If he finds that the miner has loaded too much slate, the latter is asked to take a day off. Two or three offenses result in a discharge.

HANDLING BITUMINOUS COAL

Handling bituminous coal after it leaves the mine is a much simpler process. Often it is sold as run-of-the-mine, in which case the mine cars are simply run up to the top of a building called the tipple, tipped over, and their contents dumped into a chute that leads to the railroad cars on the track below.

If it is not shipped as run-of-the-mine, it is graded over a series of bar screens into lump, nut, and slack, each grade going into its own pocket ready to fall by gravity into the railroad car. Some of the bituminous tipples are large and elaborate affairs, capable of separating many thousands of tons of coal a day and loading it ready for shipment.

Were space at hand, one might tell of the great culm banks that are being made to give up their coal; of the coal being dredged out of the rivers of the anthracite region, which was deposited there through decades of freshets and floods; of the superstitions of the miners, as, for instance, the dread of the white mule, which is harmless if the miner detects its ghostly approach, but certain to inflict a mortal bite if it is able to steal up unobserved.

Photograph by J. Horgan, Jr.

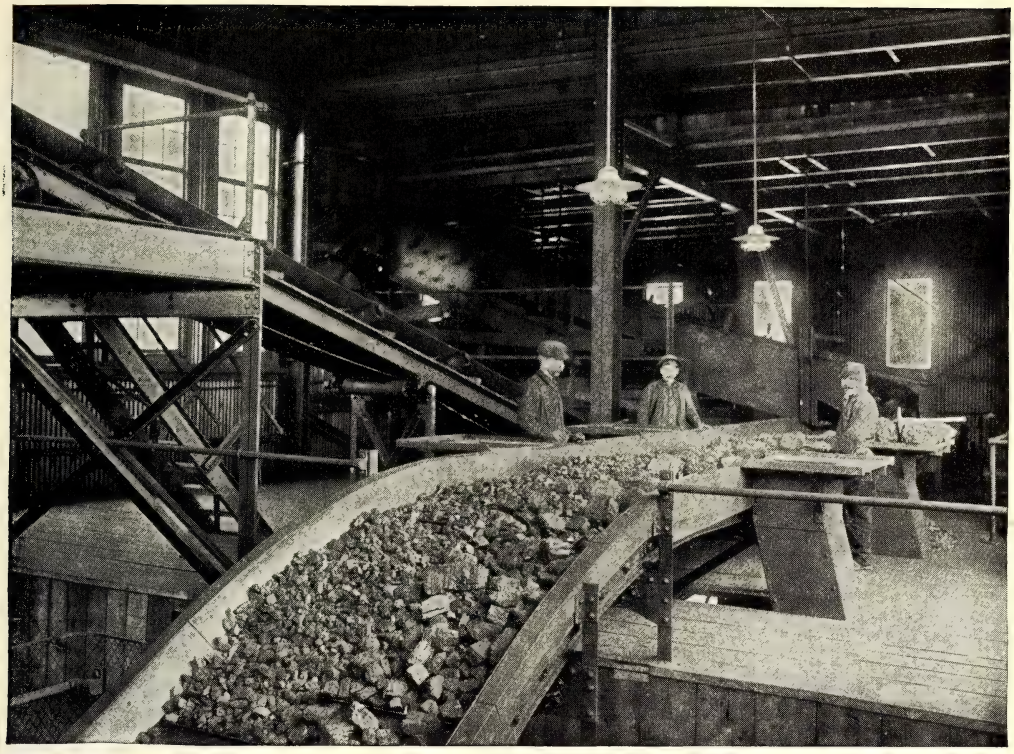
SLATE PICKERS AT WORK IN A SCRANTON BREAKER

The coal burned in the household grate had to "shoot the chutes" of a breaker before it was ready for use. After the mechanical slate pickers have finished their work, the coal is distributed to various chutes according to size and then hand picking takes out the slate that still remains with the coal.

But having seen the coal mined, brought to the surface, and put through breaker or tipple, it will be well to follow that coal to the market, and for that purpose we will watch the Jersey Central gathering the loaded cars from the Lehigh & Wilkes-Barre collieries, which it owns through stock control, and moving them to market.

A number of engines are busy all day long collecting the cars from the several collieries. These they move up to Ashley, at the foot of the Wilkes-Barre Mountain. From this point they are dragged to the summit by a series of three inclined planes and cableways.

Safely at the top, twelve miles from Ashley by rail, but only a few thousand feet by incline, the cars are released and roll by gravity down to Penobscot yards,



Photograph by Heyl & Patterson

SLATE PICKERS AT WORK

Moving by on an endless apron, hour after hour, the coal is looked over by the pickers, whose duty it is to take out every piece of slate. It is wonderful how well trained their eyes become.

just over the brow of the mountain. Here, with much switching, a train is made up and you think it is starting on a straight run for market.

But that is a mistake. The train will run only as far as Mauch Chunk, 27 miles away. Here it will go into the yards, behind great accumulations of other cars. There is more switching; and some time, maybe the next day, maybe several days later, these cars are put into other trains and started to tidewater. There they go into yards again and more switching takes place, with road engines idle while yard engineers work.

Why coal trains must be made up, broken up, made up, and broken up again, amid all the confusion and congestion of crowded freight yards, instead of being so made up at the point of origin, that all lost motion may be dispensed with, well may puzzle the uninitiated.

Under even a headway of twelve miles an hour, a coal train ought to run from Wilkes-Barre and Scranton to New York in eleven hours; and yet cars are oftentimes many days wending their way through congested yards to their destination. They spend from two to ten hours in yards where they spend one rolling to market.

THE CREATION OF COAL

Having seen the harvest in the coal field, let us turn to the seed time. Millions of years ago Nature stored away billions of tons of coal for us, and then left us a record of her processes written in a language that all ages and tongues can understand. It is a story so wonderful as almost to defy belief, and yet one so plain to him who reads it as to defy unbelief.

Under every seam of coal there is a bed of clay, and in this clay may be seen petrified stumps and roots with the trees they supported shooting up through the

Photograph by J. Horgan, Jr.

BREAKER BOYS AT LUNCH TIME

In the days before child-labor laws began to mean something, such youngsters as these spent most of the years of their minority in the breakers picking slate. But now they are in school and older boys and men must do the work. But at that, many a breaker-boy of the past is now a successful business man.

coal itself and through the slate above. With this evidence, can it be doubted that trees grew in the coal-forming age? And when you find petrified ferns and shells above and below the coal, and evidences of them in the coal when placed under a powerful microscope, can you doubt that plants were existent, or that there was animal life on the earth in that era!

And when you discover sandstone and slate placed in exactly the same position as sand and silt deposited by rivers upon the floor of the continental shelves of the sea, can you doubt that this sandstone and slate were once sand and silt submerged beneath the sea, especially since you find the remains of all sorts of sea life in them?

And, furthermore, when you find above the seam of coal and its overlying strata another bed of clay, another seam of coal, and other overlying strata, and above them still another series, and yet another, until there are as many as eighteen seams of coal, with their attendant strata of clay and slate and sandstone, is it possible for us to interpret Nature's message otherwise than that there were eighteen risings and sinkings above and beneath the waves, eighteen crops of carbonaceous materials gathered, garnered, and carbonized for our benefit?

Yet these are but a few outstanding passages in the amazing story Nature has written for the seeker after the truth of the geological story of coal. Those who are able to understand the sermons that

Photograph by Earle Harrison

NATIVE MOUNTAIN WOMEN COME FROM MILES AROUND TO THE COMPANY COMMISSARY TO TRADE: MONEY IS RARELY USED, AS THEY GIVE FOR MERCHANDISE BUTTER, EGGS, AND CHICKENS

the great Author has written in the rocks, and to translate the books that He has compiled in the running brooks, find the wonderful story of earth history told in twelve great chapters representing as many eras in geological time.

As we descend the coal-mine shaft, we begin to leaf backward in the great book of Nature. The first chapter we come to is the last one in the book, and it begins with the advent of man on the earth. Next to that is the chapter which gives the story of the age of mammals. It takes the two chapters beyond this to tell us the story of the age of reptiles. Then we come to the fifth chapter from the end, or the seventh from the beginning, and it tells us the remarkable story of coal.

In thus leafing backward in the book of the ages, as we descend the shaft, we scan millions of years of geological history.

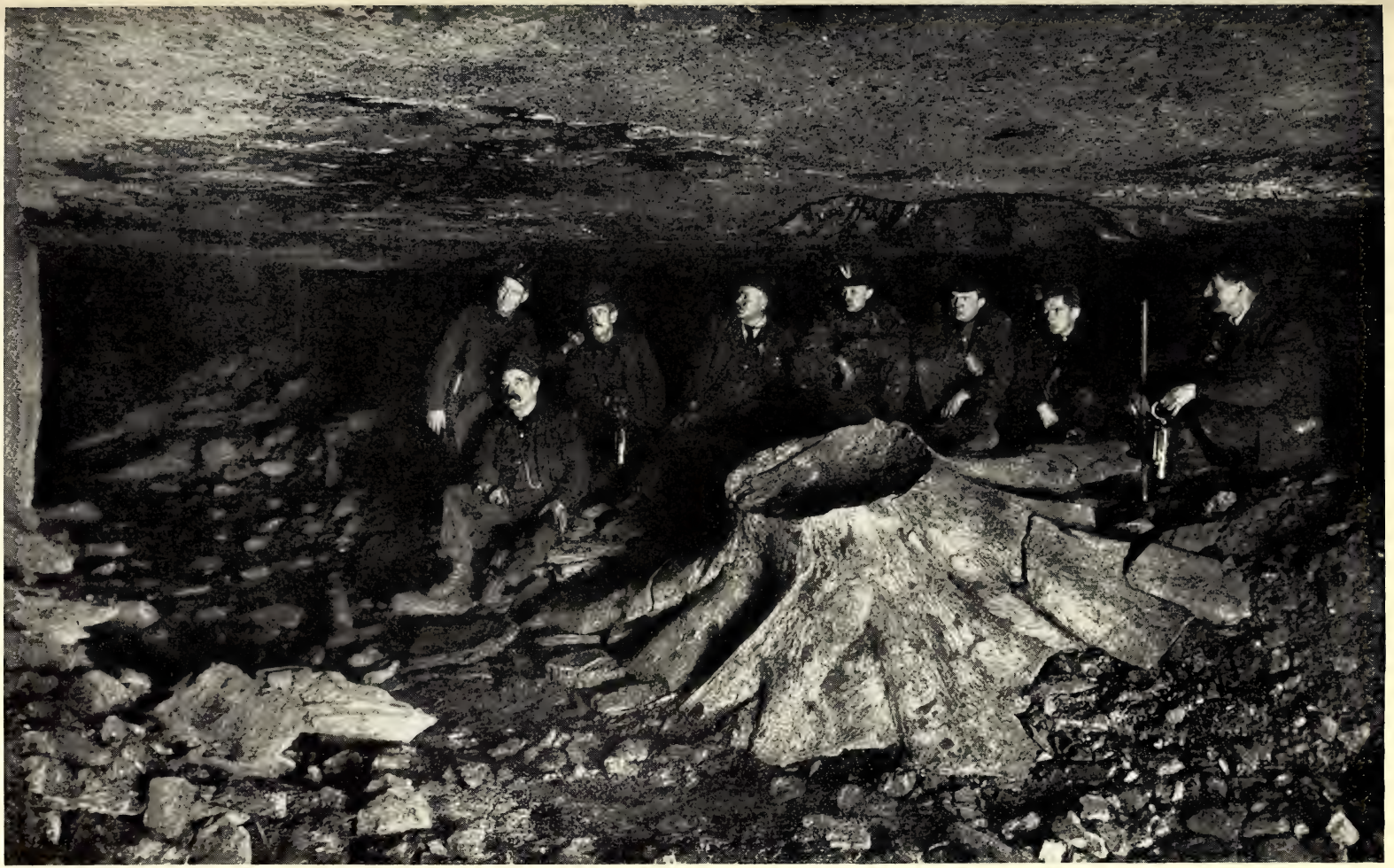
The chapter which tells us of the coal age is an amazing account of a wonderful time. We find that there were many kinds of fishes existing in those times, but that there are few evidences of other than gill-breathing creatures upon the earth. Not a single specimen of animal life of that era has survived to this time, but there was a vegetation of unbelievable abundance and size.

Many of the plants which existed then were plainly the ancestors of plants

Photograph by J. Horgan, Jr.

A COAL VEIN THAT YIELDS SOME TWO THOUSAND TONS TO THE ACRE

When it is realized that the densest forest that living man has ever seen would make a coal seam less than an inch thick, the tremendous amount of vegetation required to make this ten-foot seam can be realized. Who can appreciate the majesty of the Creator of all things so well as those who can read Nature's account of the wonderful processes of creation! (see text, pages 423, 425, 428).



© J. Horgan, Jr.

PETRIFIED TREE STUMP IN THE CORK AND BOTTLE MINE: SCRANTON, PA.

This is a tiny paragraph from the chapter on carbon in the great Book of Nature. It is a volume compressed into a sentence in picturing the story of the formation of the coal we burn. Could every man go down into a deep mine and there read of the painstaking processes by which a bountiful Mother Nature so richly provided for us, there would be a fuller appreciation of the genial miracle-working heat which is coaxed from coal.

Photograph by J. Horgan, Jr.

CHEMICAL FIRE-FIGHTING APPARATUS FOR MINE PROTECTION

Every precaution is taken to protect mines from fire disaster. In the Carbondale country of the anthracite area there is a mine that has been burning for years. It has never been found possible to check the flames. Occasionally there are cave-ins which startlingly suggest the bottomless pit. Restoring a mine after a serious fire is often a matter of years.

which live today, but the survivors are pigmies, measured by the giant statures of their antediluvian ancestors. Trees that rose to a height of fifty feet and possessed trunks two or three feet in diameter are now represented by plants with stems a fraction of an inch in circumference and a foot or so high.

AMAZING COAL-AGE VEGETATION

Nor was the difference in luxuriance as compared with today less great than the difference in size. There was the great lepidodendron, a club moss which grew from forty to fifty feet high; its largest existing descendant reaches a height of not more than three feet. There was the sphenopteris, a giant fern raising its head like a palm tree; there were the calomites, cousin of the modern horsetail, which grew in dense jungles; and there were even grasses which grew to the height of a forest of twenty years' growth.

Perhaps the most striking of all coal-age vegetation was the beautiful sigillaria, a monarch of the carboniferous forests, whose trunk often swelled to five feet in diameter and possessed a bark that seemed studded with sealing-wax impressions.

In a single mine in England thirty of these trees were found standing in their natural position in an area fifty yards square, the wood of each petrified and the bark turned to coal. In some cannel-coal mines whole trees have been found, with roots, branches, leaves, and seeds complete, all converted into the same quality of coal as that surrounding them.

Those were happy days in the vegetable kingdom. Plant life was quickened as animal life is stirred by the ozone of the sea, for the air was laden with unim-

Photograph from U. S. Bureau of Mines

EQUIPPED FOR RESCUE WORK IN COAL-MINE DISASTERS

It would be difficult to overestimate the value of the work of the United States Bureau of Mines in the improvement of methods for the prevention of mine disasters and in rescue operations in the accidents that, in spite of every precaution, still occur. Modern appliances and quick mobilization of rescue forces have saved thousands of lives in the industry.

aginable supplies of carbonic acid gas, which was inhaled by the Brobdingnagian jungle.

Indeed, so rich was the atmosphere in its supply of this gas that while it made vegetation grow extraordinarily rank it would have suffocated man. Furthermore, there was warmth exceeding anything we know in the tropics today, and there was moisture in abundance—more than the most spendthrift of plants could wish for.

The vegetation of that time was not limited by zones, neither by continents. In the coal beds of Alaska, in the measures of the Antarctic, or in the mines of Australia, Europe, Asia, or America—in them all one finds evidences that the five hundred specimens of plants of that era, preserved by Nature for our inspection, acknowledged no climatic zone nor found themselves limited by any ocean.

How amazingly dense was the vegetation of the coal-forming era may be shown by comparisons with existing forests. The densest jungle I have ever seen is that lying along the Motago River, in Guatemala, and men who have traveled in every tropical land of the earth say that they have never seen anything surpassing it.

Should Nature, by the processes of the coal age transform that jungle into a coal seam, it would be only a few inches thick; yet there are coal seams existing today which are sixty feet thick, though ten feet is regarded as a fine seam, and three feet will produce more than five thousand tons to the acre.

THE FAMILY-TREE OF COAL

It is interesting in passing to note the family-tree of coal. Wood contains some 50 per cent of carbon. As dense forests have decayed they have left peat beds behind them. Subjected to the pressure of superincumbent strata, and touched slightly with the internal heat of the earth, peat becomes lignite, and we can see peat so near to being lignite and lignite so near to being peat that the line of demarcation is hard to draw.

After lignite comes cannel coal, the connecting link between lignite and bituminous coal. Bituminous coal contains approximately 88 per cent of carbon as compared with 67 per cent in lignite and 84 per cent in cannel coal. Anthracite

Photograph from U. S. Bureau of Mines

FATEFUL HOURS AT A MINE SHAFT

Who can adequately picture the anguish of soul and the suspense of waiting of these women and children called to the mouth of a mine by news of an explosion that has entombed, if not incinerated, husband, father, and brother down in the cavernous depths? Dark and silent, standing like a flock of frightened sheep, there is no shrieking of women, no struggling of frenzied mothers. But there is that awful, tearless, patient

Photograph from U. S. Bureau of Mines

A TINY GUARDIAN OF THE MINER'S WELFARE

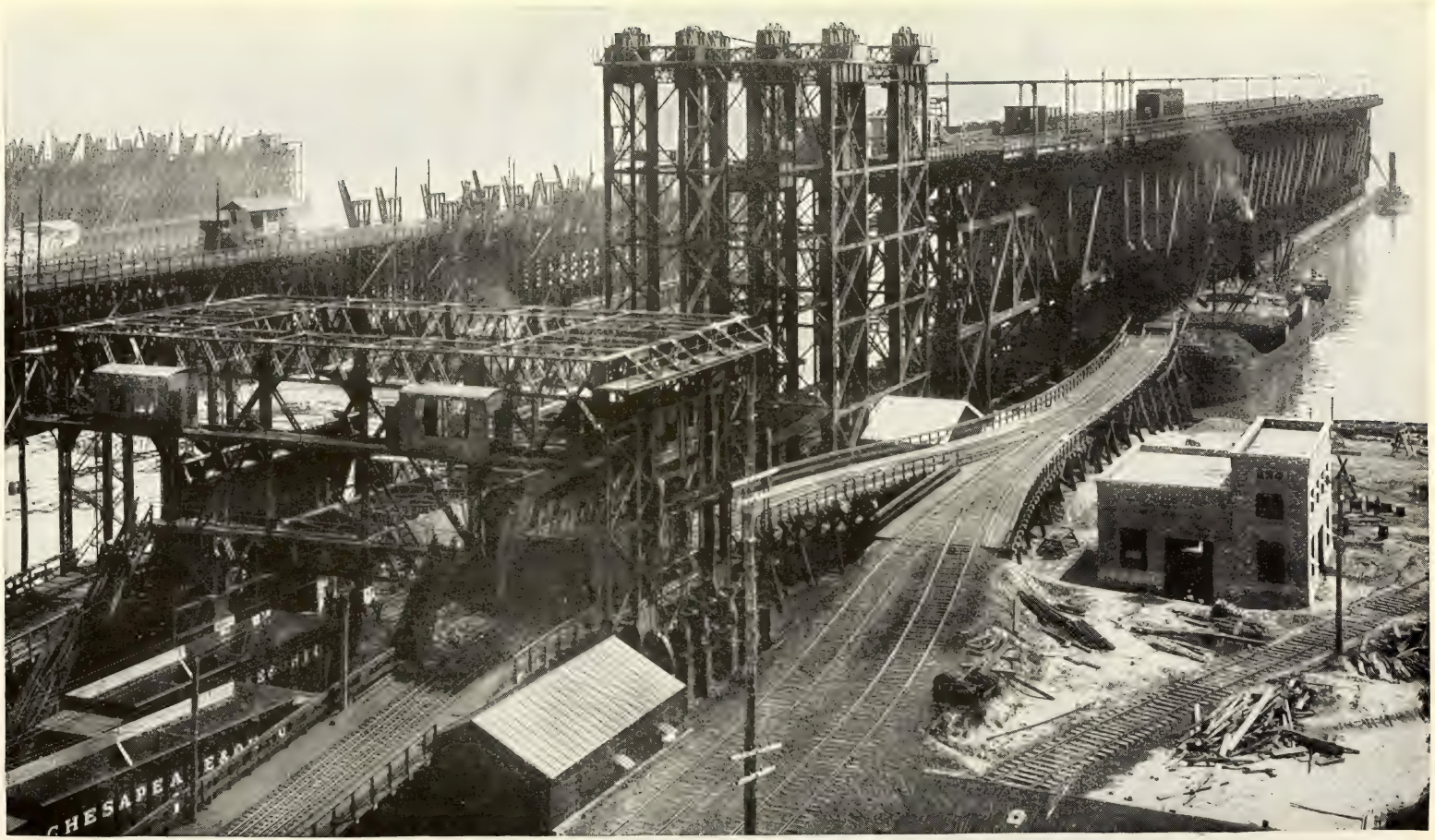
As susceptible as men are to the overwhelming effects of mine gases, the canary bird is much more so. The result is that in many disasters the birds are made the outposts of the invading army of restoration. They are overcome long before man can detect the presence of the gas and therefore warn the men of the dangers ahead.

goes still higher in carbon, with 93 to 97 per cent. Then comes graphite, with still more carbon, and finally the diamond.

Here again Nature has shown us how she made the different kinds of coal. Occasionally in a bituminous bed we come across a little section of anthracite, and always there is basalt accompanying it. In some great volcanic eruption liquid lava was thrown out and it ran over the bituminous coal, driving out, by its intense heat, exactly as the coking process does, most of the volatile matter and transforming the bituminous coal into coke, which under great pressure hardened into anthracite.

Again, if anthracite or coke be subjected to the heat of an electric furnace, as it is by the abrasive manufacturers at Niagara Falls, it becomes an impalpable black powder. So, also, in the earth do we find places where anthracite underwent such intense heat that even the little gas it contained could not resist expulsion, with the result that the anthracite became graphite, which is widely mined and which the world uses alike for lubricating machinery, making lead pencils, polishing stoves, and shining shoes.

That the diamond, the head of the carbon household, was formed in the presence of iron, under tremendous pressure, was a theory arrived at by M. Henri Moisson, an eminent French chemist. Analyzing a great number of small stones, he found always a trace of iron present. He held that molten iron, cooling in the presence of carbon deep in volcanic depths, where there was little elbow room for it to undergo expansion in assuming a solid form, would exert a tremendous pressure upon the particles of carbon it



Photograph from Wellman-Seaver-Morgan Company

COAL PIERS AT NEWPORT NEWS, VA.

In the handling of coal one of the principal difficulties is the lack of storage facilities. Neither at the mines nor at the terminals is there provision for reserves. The mines cannot produce any more coal in any given day than the railroads can provide cars for its removal. Nor can the railroads haul more coal in a given day than the ultimate consumer can use. The result is that there is no real reservoir at either end, and the industry always has a hand-to-mouth existence. If storage facilities for coal, such as are used in the iron-ore trade, could be utilized the industry could better adjust itself to the working of the law of supply and demand. Some of the newer coaling plants can load 2,000 tons of coal into the hold of a ship in an hour. When it is remembered that it costs $1,000 a day to keep a 10,000-ton ship in commission, it will be seen how important rapid loading and unloading operations are.

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A SNOW-COVERED DOUBLE HEADER AT THE END OF A RUN

A very cold and snowy winter at all times presents to the railroader a situation that a layman sitting before a warm fire or impatiently waiting for his coal bin to be filled can little appreciate. When transportation facilities are taxed beyond their limit, conditions such as prevailed last winter involve difficulties and trials for train crews that would discourage the most indomitable.

absorbed, and that these would thereupon assume the crystalline form.

He decided to attempt a duplication of the process. Packing a cylinder of soft iron with the carbon of sugar, he placed the whole in a crucible filled with molten iron, which was raised to a temperature of 3,000 degrees by means of an electric furnace. The soft cylinder melted and dissolved a large portion of the carbon. The crucible was thrown into water and a mass of solid iron was formed. It was allowed further to cool in the open air, but the expansion which the iron would have undergone on cooling was checked by the crucible which contained it. The result was a tremendous pressure. Opening up the crucible Moisson found his theory correct. He had duplicated Nature's process in a small way and had achieved Nature's results.

SUBJECTS UNTOUCHED

Thus we see that the difference between peat and diamonds is only a difference in degree of heat and pressure applied to carbon in geological ages gone by, and the marvelous story of coal links the beautiful ferns and the stifling carbonized atmosphere of millions of years ago to the scintillating diamond and the dark mine of the living present.

One fain would let his enthusiasm outpace his judgment with such an inspiring story to chronicle and write a book rather than an article, for there is so much that remains untold. The picture of the world before coal was utilized remains undrawn; the vastness of coal beds of the earth and their influence upon nations and peoples remain unappraised; the history of coal utilization remains unwritten; the need of coal conservation and the inefficiency of modern engines, which waste from 85 to 95 per cent of the energy in the coal they use, remain undiscussed; the life of the miner and the heritage he bequeathes to humanity have been barely mentioned.

These and many other phases of the thrilling story of King Coal and his beneficent reign upon the earth must be passed over. Sitting by a warm fireside, reading a favorite magazine, how little we reckon all the ramifications of the wonder tale of the seed-time and harvest and utilization of Nature's great gift of heat and energy to man!

THE SPIRIT OF THE GEOGRAPHIC

IT IS a stimulating privilege to see into the heart of a generous, sympathetic, and patriotic people. Such a privilege has been the rich experience of the Board of Managers of the National Geographic Society since an announcement, first appearing in the pages of the GEOGRAPHIC some months ago, invited the members of the Society to contribute to a fund for the establishment of a Geographic Ward in American Military Hospital No. 1 (then the American Ambulance Hospital), at Neuilly, a suburb of Paris.

That two wards have been established instead of one and twenty beds are now being supported instead of ten, as originally contemplated, is tremendously gratifying; but far more significant and inspiring than this fact has been the tender spirit of solicitude and often of self-sacrifice reflected in every contribution for this noble cause.

From every quarter of America and from members in distant parts of the world the response has come. The membership, in spite of the extraordinary demands made upon them for the support of Liberty Loans, Red Cross and War Service Community drives, and the expanded needs of their local charities, have yet found the occasion and the means to subscribe generously toward this fund for the care and comfort of our wounded boys in these Geographic wards.

Even more moving has been the response of those whose contributions have been made at the expense of personal privation, and how beautiful has been the tribute of those who have given not only

money, but the fruits of their individual industry.

ORPHANS SEND THEIR PENNIES TO PROVIDE A TREAT FOR THE WOUNDED

Whereas a "fellow-feeling makes one wondrous kind," suffering and sorrow make us supremely sympathetic, as attested by the following letter to the Editor received from Mrs. Cynthia A. Mann, secretary of the Children's Home Finding and Aid Society of Idaho, at Boise:

"I saw in the July number of the GEOGRAPHIC MAGAZINE that your Society had two wards in American Military Hospital No. 1, Neuilly, France, and that it cost $600 a year for a bed without any extras. I want to do all possible in my little way and encourage the unfortunate wards in my charge (I am teacher in our orphans' home). I paid them for pulling weeds, and they saved their pennies and earned nearly $4.00. I told them we would send $10 for an ice-cream treat; and I wish to feel that I have maintained a bed for at least ten days, so please find enclosed a draft for $26.50. Please be sure of the *treat,* for our little ones feel that they worked very hard. Two of them blistered their hands. We weighed the weeds; one little 9-year-old pulled 25 pounds and earned 50 cents. Some under 6 years pulled a pound.

"If the boys Over There could know of the love and ardor of their affection they would enjoy the treat doubly. I have made four scrap-books, which every one pronounces very interesting, and I spent much time, thought, and labor to make them worth while for the entertainment of our dear lads while in hospital. Wit, humor, patriotism, sentiment, valor, devotion to home, country, and truth are illustrated by picture and story. Some old, old gems; others new, grown out of the times. I wish to send these to your wards. How can this be done? Would you be kind enough to write me. I wish we might hear from some of the patients. It would be a great day in *The Children's Home.* And what a memory to have for all time, 'We sent the soldier boys a treat and they sent us word they got it and it was fine.'"

TRUE SERVICE BY COLLEGE GIRLS

At the opening of the autumn term of Flora Macdonald College, Red Springs, N. C., the president, Mr. C. G. Vardell, wrote to the Society saying that the faculty and student body had read with deep interest Carol Corey's article, "A Day in the Geographic Wards," and that they would like to support a bed in one of them. He added that the young lady students, instead of taking the amount from their allowance, proposed to earn the money by doing the work around the college which housemaids had been doing, and thus show the real spirit of their purpose. In reply to a letter heartily approving the plan, Mr. Vardell wrote, on September 25:

"Your very kind letter of the 21st has been received. I read it to my student body last night and they received it with tumultuous applause. They are gladly doing this service, and I call it *real* war service.

"How shall we remit the money to you? Once a month, if you say so. If possible, the students would like a small, inscribed placard at the head of the bed. Will they be allowed to make scrapbooks and provide small things especially for that bed? They want it to be just the best bed that ever was spread in any hospital and are prepared to do all they can to make it qualify as such."

The remittance has been coming to the Society regularly on the first of each month, and over one of the beds in the Geographic wards there is framed today a neatly printed legend, reading:

BED MAINTAINED BY
FLORA MACDONALD COLLEGE

THE TRIBUTE OF AGE TO SACRIFICING YOUTH

Pathos, industry, devotion to our country's cause and to our soldiers' needs are reflected in the many letters which have accompanied contributions of afghans, pillows, pajamas, bathrobes, slippers, comfort bags, and many other useful articles for the equipment of the wards and to convey a touch of "home" to the youths who are suffering from nostalgia as well as bodily pain in a foreign land.

THE MOTHER OF THE REGIMENT

A famous English poet has pointed out that we may live without poetry, music, and art, but "civilized man cannot live without cooks." Ask an American doughboy if life would have been worth living at the front without the Salvation Army cook, comforter, and general utility cheerer. That this noble servitor for the American soldier is doing her all under fire is attested by the fact that she is wearing her shrapnel sombrero, and the only jewelry which adorns her person is the "bracelet" of her identification disk.

Here is a typical letter from a bereaved husband in New York State: "The enclosed blanket was knitted by Mrs. ——, age 70 years, while suffering from a broken ankle last winter. She desired that it be sent to France. As the National Geographic Society maintains several hospital units there, we concluded it would be proper to present it to you for one of them. Shortly after finishing the blanket Mrs. —— died suddenly of heart trouble."

A short time ago there came to the Editor's desk this eye-dimming missive: "It is not much I can do, as I cannot afford to, as I am a Civil War veteran's widow. But I want to do anything I can for our dear boys who have shown their love of country and their loyalty, too. I am 81 years old. I hope you will like the wash-cloths. I have never knit anything before. If I can do anything else, please let me know."

Here, indeed, is inspiration for another parable of the Widow's Mite.

And, at the other end of life's scale, the day's mail brings a package of towels, comfort bags, and one wash-cloth knitted by the eight-year old daughter of a Vermont mother whose son is in the army.

From New Orleans there comes a "happiness quilt," with a letter which adds, "If you want more such quilts for our convalescents, all right, you will get them; for, when off duty, as a lawyer (a woman), I *can* knit and, better yet, I have lots of friends I can press into service."

A HERO OF 1861 KNITS FOR THE HEROES OF 1918

From Springfield, Mass., comes the following: "I am writing you in the interest of my father, —— ——, who has been a subscriber to the NATIONAL GEOGRAPHIC MAGAZINE for some time. We recently read in one of the issues an article on a Paris hospital, two rooms of which are furnished by the Geographic Society for the benefit of American soldiers. My father is 85 years old, a G. A. R. man, and his grandsons—my three boys—are now in the service, two of them in France. He has been for the past year industriously knitting, until now he has completed two afghans, which he very much desires should be sent to that very hospital in which you are interested."

Comfort bags, made and filled by mothers of Annapolis graduates during June week; six afghans, knitted by the young ladies employed in the headquarters of the National Geographic Society; comfort bags, designed as Christmas gifts for each boy occupying a bed in the Geographic Wards; scrap-books from Camp Fire Girls; an afghan from Cuba; boxes of sheets, pillows, and other supplies from many women's clubs; two great boxes of hospital supplies from the women of Ohio; afghans knitted in small squares by the school children of many States—these are some of the contributions which have flowed into these offices continuously since the first announcement of the need for them, and will continue to be received, for that need is not yet satisfied, with tens of thousands of wounded men still in France.

Not all of the contributions have come through the mails. A few mornings ago there called at the editorial offices of the Society a matron in whose eyes tears gleamed as she confessed that her health was such that her efforts to assist in Red Cross work had proved futile. "All I can do is give," she added. "My son enlisted in the British army before America entered the war, but he has since been transferred to our own expeditionary forces, and I want to feel that I have aided in giving comfort to some one of his associates who may be stricken on the firing line. Will you allow me to endow one bed in one of the Geographic Wards for a year? I would like to contribute, in addition to the $600 for the support of that bed, $5 a month to buy the 'extras'—fruits, chocolates, and 'smokes'—which Mrs. Corey mentioned in her account of her visit to the wards."

YOUR PERSONAL INTEREST DESIRED

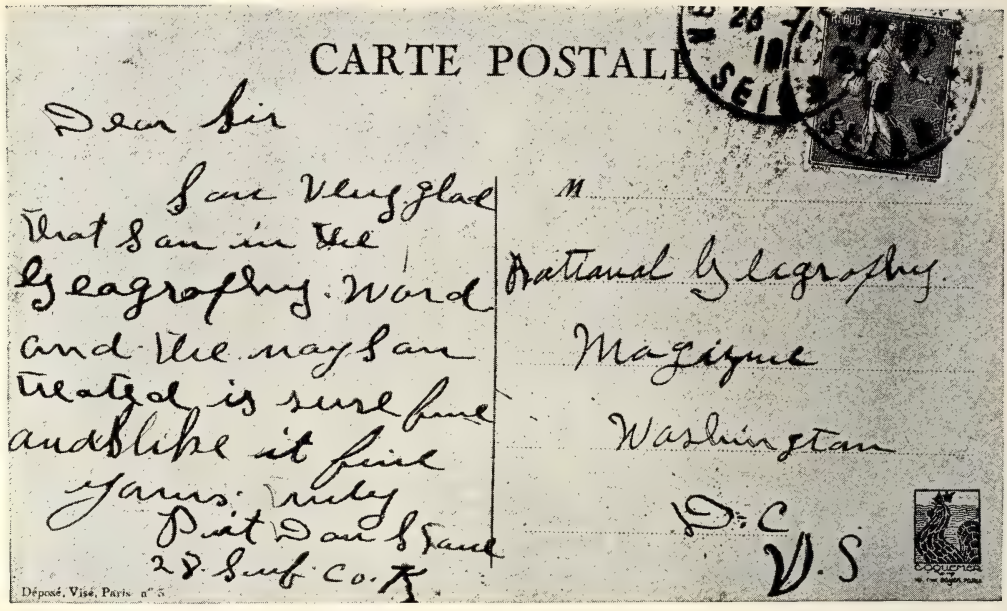
Thus have members of the National Geographic Society responded to an opportunity afforded them to establish a direct personal bond with the men who have suffered for us Over There, while we have endeavored to sustain them and our common cause Over Here.

MUNITIONS MAKERS IN THE FRONT LINE TRENCHES

Not the ordinary kind of high explosive shell and machine-gun bullet, but the kind that put "pep" into the American soldier in his battles with the Hun. Here is a typical pie "factory" conducted by Salvation Army workers.

THERE WAS NO PLACE WHICH RADIATED THE SPIRIT OF HOME FOR THE BOYS AT THE FRONT MORE EFFECTUALLY THAN THE SALVATION ARMY KITCHEN

The distribution of doughnuts was invariably accompanied by something less tangible but infinitely more important in the maintenance of morale—a smile and word of good cheer. The little demons of homesickness fought a losing fight whenever they came in conflict with the spirit of cheeriness which was always in evidence in the presence of a Salvation Army lassie.



HOW THE SPIRIT OF THE GEOGRAPHIC AFFECTS THE SPIRITS OF THE WOUNDED SOLDIER

A post-card greeting received from one of the American boys who is being nursed back to health and usefulness in one of the Geographic wards in American Military Hospital, No. 1, at Neuilly, a suburb of Paris.

The need for these splendid wards will not cease for many, many months, and it is hoped that the opportunity presented the membership for taking personal part in the operation and upkeep of the Geographic Wards will be embraced, especially since every dollar subscribed is applied directly, there being no salaries or overhead expenses of handling the fund.

"THE RACES OF EUROPE" NUMBER

THE next number of THE GEOGRAPHIC will be devoted to "The Races of Europe," by Edwin A. Grosvenor, LL. D. This will be one of the most important monographs ever issued by the National Geographic Society, because the complexities of the race problem in Europe, which must be surveyed and settled, are of more vital interest to the world today than ever before in human history.

It is impossible to appreciate the variety and the seriousness of the racial questions now being discussed by peoples everywhere without a clear idea of racial origins, racial characteristics, and racial boundaries as distinct from political boundaries.

Dr. Grosvenor's authoritative and at the same time entertaining and dramatic story of the "Races of Europe" will prove of absorbing interest to the casual reader and of invaluable assistance to the student of European conditions.

It will be accompanied by numerous striking illustrations, and as a supplement there will be issued with the magazine a remarkable map, printed in 19 colors, which will prove a key and guide not only to the accompanying text, but to the day-to-day news from across the Atlantic.

Victrola

The life of the home — The joy of the camp

In homes throughout the land where the boys are absent in the service of Uncle Sam, the Victrola with its corps of noted artists is keeping up the spirit of the home-folks with its superb music and entertainment.

In the camps where our soldiers and sailors are gathered, the Victrola is also in active service doing its musical duty. Its cheering music and wholesome entertainment afford a welcome diversion to pleasantly while away the spare moments.

The Victrola is the messenger of cheer whose inspiring music is so necessary in these stirring war times. During the coming holiday season, it will find its way into many additional homes. And many new Victrolas and Victor Records will be among the Christmas gifts to bring joy to the hearts of the soldier and sailor boys in camp.

Victors and Victrolas $12 to $950. Victor dealers everywhere. They will gladly play any music you wish to hear.

Victor Talking Machine Co., Camden, N. J., U. S. A.

To insure Victor quality, always look for the famous trademark, "His Master's Voice." It is on all products of the Victor Talking Machine Company.

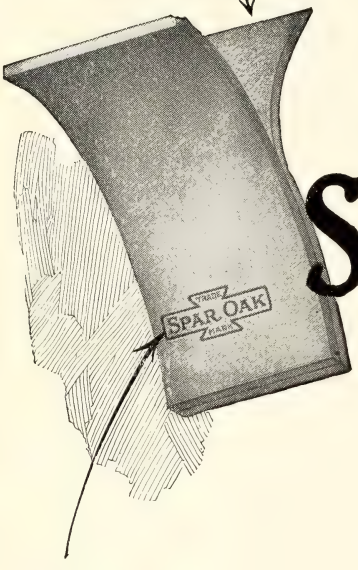
A Double Service Belt

Most good belts are built so as to have either fine pulley-gripping surface and less ruggedness, or plenty of ruggedness and less traction.

SparOak, one of Graton & Knight Standardized Series Leather Belts, is a unique belt because it has super-gripping power and the firmness that resists the mauling of hard usage.

The side of SparOak next to the pulley is Graton & Knight Spartan—the belting leather with the highest co-efficient of friction ever attained in any belting material; the outside is the finest quality of Graton & Knight special oak tanned, extra firm center stock. Combined, they form a belt of absolutely unique quality.

The outer part of SparOak is firm, heavy, selected special oak tanned center stock.



The side of SparOak next the pulley is Spartan leather, giving the maximum grip on the pulley.

SparOak Belting

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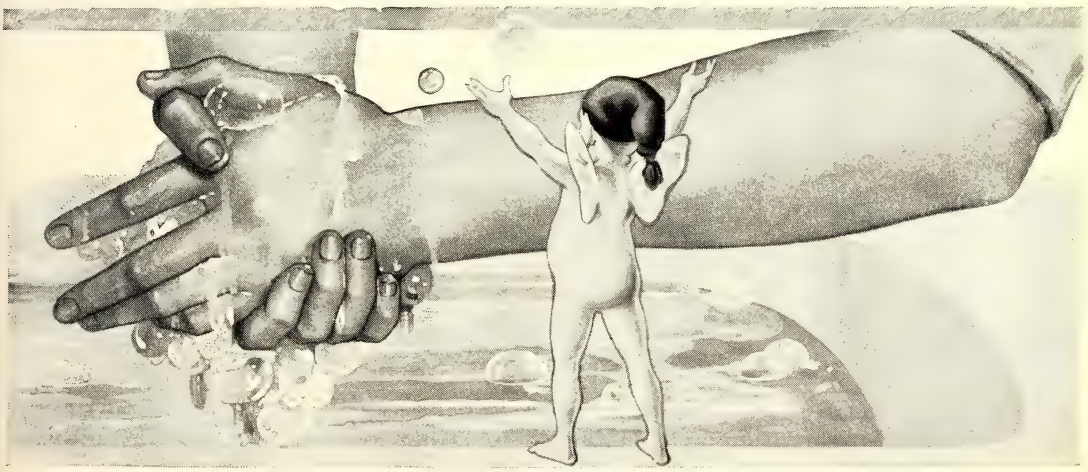

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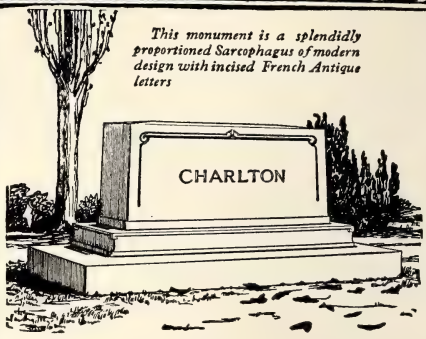

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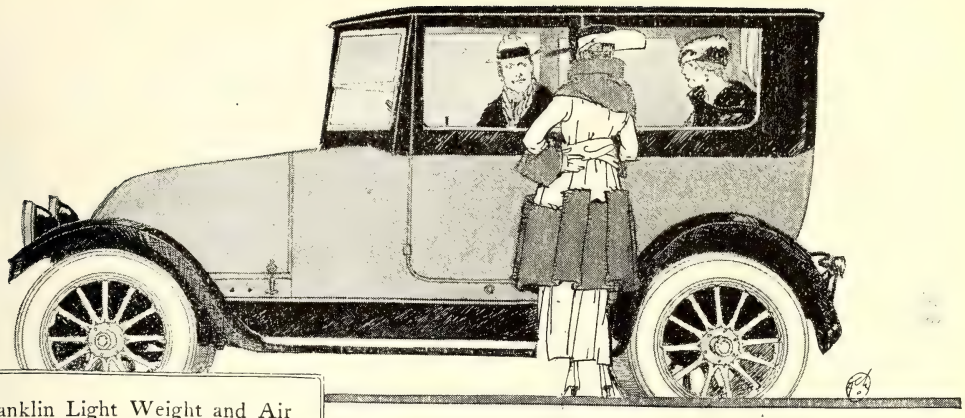

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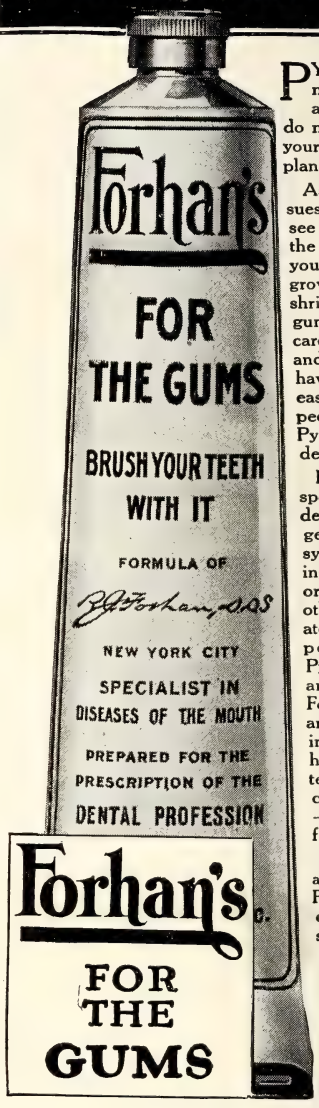

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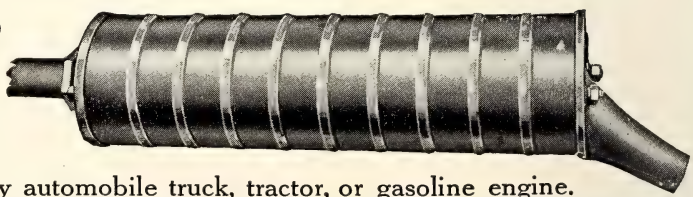

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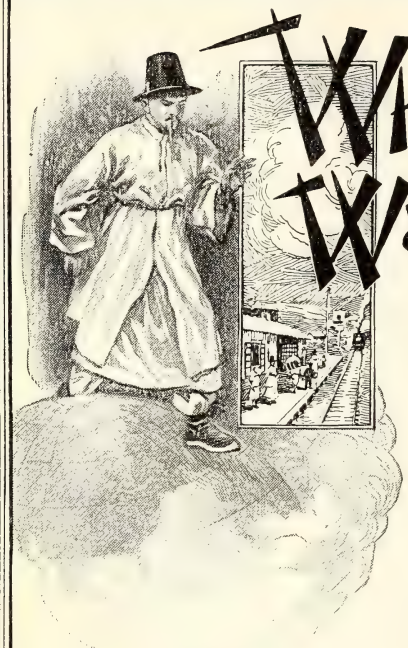

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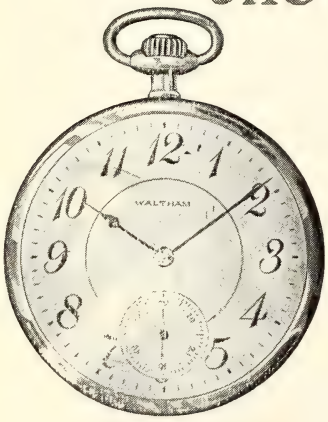

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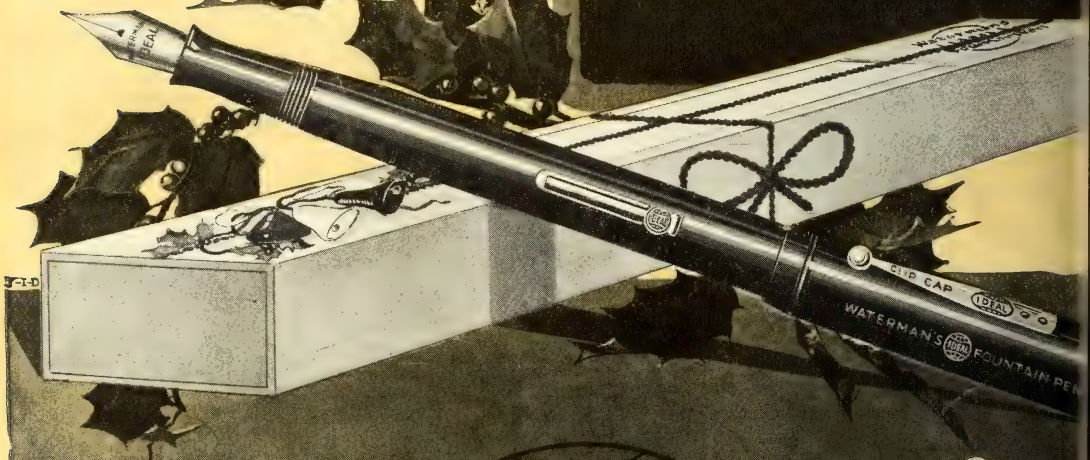

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VOLUME XXXIV NUMBER SIX

THE NATIONAL GEOGRAPHIC MAGAZINE

DECEMBER, 1918

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PREMIER CLEMENCEAU AND GENERAL PERSHING AT VERSAILLES, FRANCE

From a hitherto unpublished photograph by the Signal Corps, U. S. A.

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In the background is General Pershing's Automobile identified by the four stars on the windshield.

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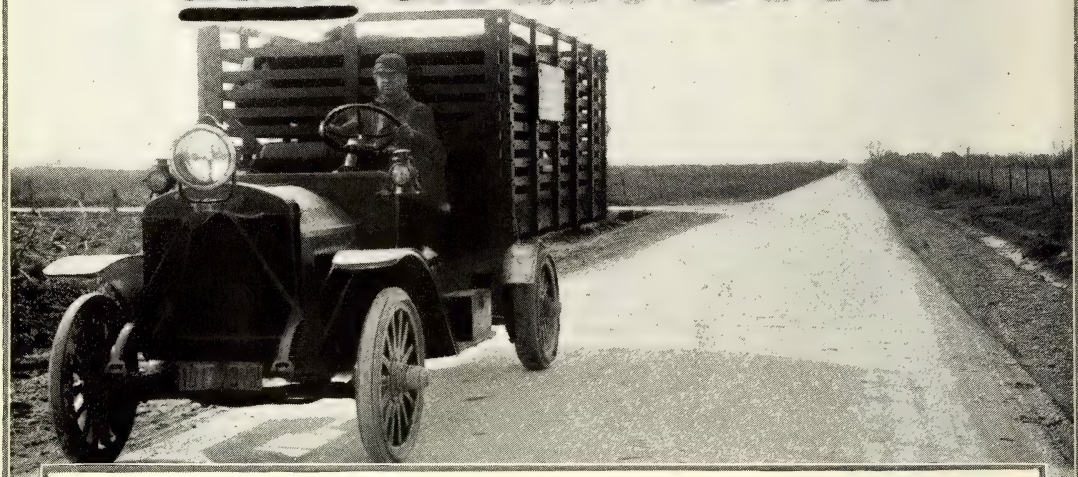
Concrete Roads and Roast Beef



THIS load of roast beef, life stock from farms in the vicinity of Indianapolis, Ind., is on its way over one of the **concrete roads** of Marion Co. to the Indianapolis stockyards. Before the combination of motor trucks and **concrete roads** existed in Marion Co., farmers in the vicinity of Indianapolis had to sell live stock to dealers, who bought enough cattle in the neighborhood to make a carload for shipment to Indianapolis.

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"It also saves shrinkage in weight of the cattle, caused by loading, shipping and unloading from freight cars, and I can ship as often as I have stock ready for the market, without waiting to get together a carload, which often makes it necessary to include animals still under full weight.

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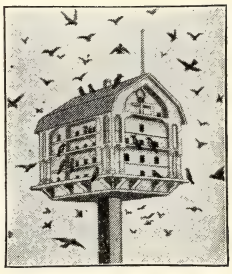

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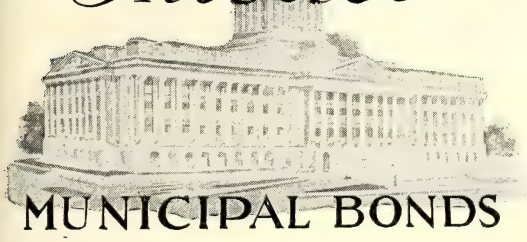

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VOL. XXXIV, NO. 6 WASHINGTON DECEMBER, 1918

THE NATIONAL GEOGRAPHIC MAGAZINE

THE RACES OF EUROPE

The Graphic Epitome of a Never-ceasing Human Drama. The Aspirations, Failures, Achievements, and Conflicts of the Polyglot People of the Most Densely Populated Continent

BY EDWIN A. GROSVENOR, L. H. D., LL. D.

PRESIDENT UNITED CHAPTERS, PHI BETA KAPPA, AND RECENTLY PROFESSOR OF MODERN GOVERNMENT AND INTERNATIONAL LAW IN AMHERST COLLEGE

Dr. Grosvenor, the author of this article, has devoted fifty years to the study of the racial conditions of Europe. Twenty years as Professor of History in Robert College, at Constantinople, gave him unusual opportunity to observe intensively the subject with which he deals, for nowhere else in the world has the racial tide ebbed and flowed in such remarkable fashion as in the Balkans, and nowhere else has the teacher of history found more need for an intimate knowledge of his subject. There is not a country in Europe which he has not visited and among whose people he has not personal acquaintances and friends. He is the author of "Constantinople," two volumes; "Contemporary History," "The Permanence of the Greek Type," of some three hundred articles on Eastern subjects in various cyclopedias, was Editor of the Reference History of the World in Webster's International Dictionary (last edition), and has translated, with revision, Duruy's "History of Modern Times" and "History of the World" from the French and "Andronike" (the most popular Greek novel) from the modern Greek.

EUROPE is the smallest, except one, of the six continents. Of about the same size as Canada or Brazil, one might question, regarding merely territorial extent, whether Europe should be called a continent at all. Siberia exceeds it by more than a million square miles. On the map of the Eastern Hemisphere it appears insignificant. It is dwarfed on the south by the ponderous bulk of Africa, while Asia, to which it clings, thrusts it disdainfully away toward the northwest.

Were it attached to Asia by a distinct isthmus, as is Africa or as are North and South America to each other, it would, as a well outlined peninsula, possess an easily recognized existence of its own.

Instead, an indefinite border land, more than two thousand miles in length, makes it impossible to tell where Asia ends and Europe begins. The interjection of the Caspian Sea breaks this border-land into two great stretches, one between the Arctic and the Caspian, and

© Donald McLeish

THE BERNESE OBERLAND: SWITZERLAND—MOUNTAINS ARE NATURE'S TOWERING SIGN-POSTS DIRECTING THROUGH THE AGES THE MIGRATIONS OF RESTLESS RACES

"The various routes of migration into Europe, the later wanderings of the immigrants, and their constant relocations may be directly traced to geographic causes, of which the mountain system, the rivers, and plains had a determinative part. The backbone and dominant factor of the continent is the Alps" (see page 448 and also map on page 506).

one between the mountains of the Caucasus and the Black Sea.

THE ORIGIN OF THE NAME EUROPE

On the map Europe is only an extension or prolongation of Asia; but to this prolongation its unique physical features and its resultant history have given a distinct preëminence.

Between Europe and Asia there is no natural boundary; neither does any official line of demarcation exist. The Russians sometimes imagine such a line in the "crest of the Urals." But in the wide region over which the broad, low Urals spread, no crest ever has been or can be traced. Moreover, the Urals themselves traverse only a part of the space which subtends Europe from Asia. Because of the arbitrary or undetermined nature of that eastern boundary, eminent authorities vary in their estimate of the total area of Europe by several hundred thousand square miles.

The name Europe has been in use for more than twenty-five hundred years. Its origin and meaning are unknown. Perhaps it is derived, as the ancients believed, from the fair maiden Europa, beloved of Jupiter. Perhaps it comes from the word *irib* or *ereb,* found on Assyrian monuments and supposed to mean darkness, or the setting sun, in distinction from *asu,* found on the same monuments and supposed to mean the rising sun, or Asia. Let us agree, however, with Herodotus who naïvely confesses that "no mortal can ever hope to find out the true meaning of this word inherited from the forefathers."

WHY EUROPE'S RACES ARE PROGRESSIVE

Europe does not equal one-fourteenth of the land surface and is less than one-fiftieth of the entire surface of the globe; yet upon it dwell 450,000,000 human beings, more than a fourth of all mankind. Nor are all Europeans found in Europe. They and their children have occupied and populated the whole Western Hemisphere, of which they were the discoverers. They have partitioned and subdued to themselves nearly the whole of Africa. With the exception of China and Japan, they control all Asia and all the islands of all the seas. During the last twenty-five centuries, from them as from a focus have radiated the art and science and thought of the world.

How has this stupendous result been brought about? What potent causes have produced such practical monopoly of universal leadership?

That the early ancestors of the present European peoples were more highly endowed than their kindred or contemporaries or possessed greater capacity for development, there is no reason to believe.

In the physical advantages Europe possesses are revealed the causes which have given to Europeans and the descendants of Europeans their unquestioned superiority.

Almost the whole of Europe is situated in the northern half of the North Temperate Zone. Its extreme northern point, the North Cape, is nineteen degrees from the Pole. Tarifa, its extreme southern point, is thirty-six degrees from the Equator.

Nowhere, except in the farthest boreal limits, does excessive cold stunt body and mind. Nowhere does excessive and continued heat sap energy and enervate the will. No spontaneous prodigality of Nature removes the necessity of exertion and induces sloth.

Here, where the air invigorates, man must labor if he would survive. The rewards of labor are reasonably sure, but something more is necessary than to satisfy one day's needs. The periodic succession, "the rhythmic swing," of the seasons, where winter invariably follows summer, compels him to take thought and make some provision of food, shelter, and clothing for the days to come. Even slight labor and little forethought, neither of which can be escaped, force him toward emergence from the primitive and purely animal state toward higher existence.

Much thus far said would apply to the parallel region of North America occupied by the Dominion of Canada and the United States. It applies to no other portion of the globe. The greater part

Photograph by A. W. Cutler

A SCENE ON A TRIBUTARY OF THE DANUBE: A NATURAL ROADWAY FOR PASTORAL PEOPLES FROM ASIA INTO EUROPE

"The rivers of Europe have limited and determined the wanderings of peoples, the march of armies, and the boundaries of States" (see page 448). This Hungarian swineherd guards a curious flock—pigs upon whose backs grows a kind of wool instead of bristles.

of Africa and South America is included in the Torrid Zone. The vast broken plateau of continental Asia is girdled west, south, and east by hills or mountains which shut out the influence of the sea.

The climate of western Europe is determined by the Gulf Stream, the mightiest, most rapid and most beneficent of ocean currents. Its heated mass, deflected eastward by the Banks of Newfoundland, reaches the shores of Europe, creating on its way the exhaustless fisheries of the North Sea. Its warmth breaks the force of the winter and keeps the harbors ice-free in the Norwegian fiords. It gives to Liverpool a milder climate than that of Washington, a thousand miles farther south, and in the British Islands, due east of Labrador, causes grass to grow throughout the year.*

As no formidable barrier to breezes from the sea is interposed, the prevailing winds of Europe, loaded with ocean moisture, spread hundreds of miles inland, relieving the excesses of the seasons and fertilizing the soil.

EUROPE'S VAST COAST-LINE

The coast-line of Europe is remarkable for its length and its availability. South America is twice and Africa three times as large, and yet, although Europe is landlocked on its eastern or Asiatic side, it has a longer coast-line than that of those two continents combined. North America has double the area of Europe. But, except for what stretches along the inhospitable Arctic, the sea front of the two is nearly the same.

Europe is intersected by numerous vast, narrow, half-inland gulfs and seas which endlessly break its contour and multiply its length.

No other body of water rivals the incomparable sea which forms the southern boundary of Europe, the Mediterranean. Its general direction is east and west for nearly 2,200 miles, and it is wholly included in the southern, more genial, part of the Temperate Zone. Bathing the shores of all the continents of the old world, its area of 900,000 square miles makes it seem like an inland ocean. Two great peninsulas cut half way across, one of them more than seven hundred miles in length.

A succession of great islands at almost equal distances follow one another along a line rudely parallel to its general direction. Innumerable other islands dot its main expanse and fringe its shores. Hence results a maze of connecting seas, which abound in deep, spacious, tideless harbors to invite the enterprise of the merchant and to provide refuge from the tempest.

THE INFLUENCE OF THE ÆGEAN

Of all those interconnecting seas the Ægean or Archipelago was to exert the earliest and most abiding influence. Nowhere else did the ancient world afford a like training school for seamanship. The dwellers on the peninsular shores of Greece and Asia Minor were impelled by the circumstances of their lot to venture upon, gradually to understand, and finally to master the sea. And the sea gave back something greater than mere material returns.

Inevitably the old land kingdoms, Egypt, Assyria, Persia, India, submerged the individual in the mass. As inevitably, in the men who singly or in groups of twos or threes wrestled with and overcame the sea, the sense of personal independence was roused. This was both achievement and revelation. It was the impelling motive at Marathon and in all the struggles for freedom since down to the present day.

Classic Greece was the creation of the Mediterranean. Without the Mediterranean there would have been no Rome, of whose State it was at once the heart and the bond of union. Nor has its part in the world been less preëminent through the middle ages down to modern times. Until the sixteenth century the shifting capital of the world was located in some one of its three great peninsulas. Of all these causes which have given to

* See also, in the NATIONAL GEOGRAPHIC MAGAZINE, "The Gulf Stream," by Rear Admiral John E. Pillsbury (August, 1912).

By Henri Guinier (Salon de 1914)

THE CELTIC TYPE—A PEOPLE OF STOCKY BUILD, MEDIUM HEIGHT, ROUND HEADS, AND BROAD FACES

In "La Fontaine Miraculeuse" (The Miraculous Fountain) the artist Guinier has registered the salient physical characteristics of the Celtic group, which in ancient times lived nearest the Alps and on the great western plateaus of Europe and which now is represented in Brittany and

Europeans their ascendency over men, none has been more powerful than the fact that Europe rises like a pyramid from the Mediterranean Sea.

THE TASK OF RACE CLASSIFICATION IS MOST PERPLEXING

In discussing the races of Europe we take two things for granted: (1) that all Europeans are descended from one original stock; (2) that the remote ancestors of the present inhabitants of Europe came from Asia. We must acknowledge that many eminent scholars have controverted these assumptions and that neither has been absolutely proved, but learned opinion inclines more and more to recognition of their truth.

A race is a great division of mankind, having in common certain distinguishing peculiarities and thus forming a comprehensive class, apparently derived from a distinct primitive source.

Classification into races of the 1,700,000,000 human beings who populate the earth may seem easy. A European, a Negro, and a Chinaman differentiate themselves at a glance. Nevertheless, every attempt at classification has shown it to be a most difficult and perplexing task. Most classifications, especially of minor races, have not been comprehensive or have involved contradictions.

During the last two hundred years many such attempts have been made. The color of the skin, the color and direction of the eyes, the color and texture of the hair, some anatomical characteristic such as the aspect of the nose or the length of the limbs in proportion to the trunk, peculiarities of various parts of the skeleton, thickness or thinness of the skull, capacity of the cranium as measured by the quantity of sand or shot required to fill it, the horizontal circumference of the skull, the angle made by the intersection of the axis of the face with the axis of the skull (commonly called the facial angle), the cephalic index, the relative length, breadth, and height of the skull, have been among the tests employed to determine race. Language has generally been an inseparable part of the test and often the final decision has been based upon it.

Tireless scholars have sought to demonstrate and apply the comprehensive accuracy of some one or other of these tests. Their researches have revealed how impossible it is to indicate essential differences among the sons of men. Efforts to resolve the mass of humanity into component parts have had as principal result the finding out how homogeneous mankind is.

Nevertheless, in each of those tests there is a certain degree of truth and of applicability. Among the most recent and at present the most popular is the cephalic index. This is simply, "The figures that express the ratio of the greatest breadth to the greatest length of the skull, the latter being taken as one hundred." If the proportion is above 80 to 100, the term is brachycephalic, short-headed, and hence round-headed. If below 80 to 100, it is dolichocephalic, long-headed.

THE FIVE GREAT GROUPS OF RACES

The number of distinct human groups or races is variously estimated from the three, Japhetic, Semitic and Hamitic of the Bible, or the three, Caucasian, Mongol, and Negro, of Cuvier, to the eleven of Pickering and the sixteen of Desmoulins. The estimate in 1781 by Dr. Blumenbach, the father of anthropology, has best withstood the attacks of time. He finds five races, Caucasian, Mongolian, Ethiopian, American, and Malay.

It is said that, when in doubt how to name the first race, a finely typical skull was brought him from the Caucasus and hence came the idea of calling the race Caucasian. In the name is no suggestion that the race originated in or had any connection with the Caucasus.

Bouillet indicates the physical characteristics of the Caucasian as, "Head oval; face not projecting, lips thin, eyes horizontal; color white; hair long and glossy; beard abundant; intellectual superiority." Of the Mongolian he says, "Cheek-bones prominent; eyelids drawn toward the temples; skull rounded; face flat; nose depressed, ears long and protruding, skin

yellow and sometimes brown, beard scanty, hair straight and black."

The other three races do not concern us, as they have in no way affected the history of Europe or contributed to its life.

The Caucasians and Mongolians are further divided into branches or groups, distinguished by difference in language and by minor physical peculiarities.

Two main divisions are at once recognized among the Caucasians, designated as the Indo-European or Japhetic and the Syro-Arab or Semitic. Indo-European indicates the belief that Europeans came from the basin of the Indus. Syro-Arab means, originating in Syria and Arabia.

THE INDO-EUROPEAN FAMILY

The Indo-European includes eight branches or groups. These are: in Asia, the Aryas or Hindus of India, the Persians and the Armenians, the last two being often termed Iranians from the great plateau of Iran where they had their origin; in Europe, the Greeks, Latins, Celts, Teutons, or Germans, and Slavs.

Common usage treats these groups as races, so properly we speak of the Celtic race or the Slavic race or of the races of Europe. Because of the intimate relations of the Greeks and Latins and the cognate nearness of their languages, the two are denoted as of the Greco-Latin race. German and Teuton are interchangeable, being synonymous terms.

The great majority of the peoples who have invaded Europe and whose descendants are now settled there belong to the Indo-European family. In addition, about 30,000,000 persons, or one-fifteenth of the inhabitants of Europe, are Finno-Ugrians and Turks, members of the Ural-Altaic branch of the Mongolian family. All the rest, except the Jews, Maltese, and Saracens (Syro-Arab), and possibly except the Basques, are of Indo-European stock.

Ural-Altaian comprehends peoples, found between the Altai and Ural mountains. Finno-Ugrian is specific of a western group of Ural-Altaians. The term is derived from Finn and Ugra, the region on both sides of the Urals.

GEOGRAPHIC CONDITIONS DETERMINE RACE MIGRATIONS

The various routes of migration into Europe, the later wanderings of the immigrants, and their constant relocations, may be directly traced to geographic causes, of which the mountain system, the rivers and plains had a determinative part (see map, page 506).

The backbone and dominant factor of the continent is the Alps. The Pyrenees and the rugged Scandinavian plateau stand isolated and apart. But the Cevennes, the Jura, the Vosges, the Apennines, the tri-lateral of Bohemia, the Carpathians, the Balkans, and the gigantic masses of Montenegro, Albania, and Greece, are outspurs of the Alps. West, south, and southeast their foothills touch the seas.

Though the Alps loom across the continent like a barrier, they are less difficult to traverse than the Pyrenees. More than a dozen Alpine passes were familiar to the military expeditions of the Romans. A pass is not a gorge but a way, resulting from depressions in the great range to which deep-cut valleys lead from plains. Over those depressions poured not only the troops of Hannibal and Napoleon but numerous invaders both before and after Julius Cæsar.

In the Alps are the fountain heads of the Rhone, Rhine, and Po, and in the outspurs rise the Loire, Seine, Meuse, Elbe, Oder, Vistula, and Danube. These rivers have each limited or determined the wanderings of peoples, the march of armies, and the boundaries of States. The Danube was a natural and inevitable westward roadway of pastoral peoples from Asia.

THE ALPS, THE SIGN-POST OF EUROPE'S RACES

A line drawn from the mouth of the Pruth to the mouth of the Niemen, and thence prolonged through the Baltic and Gulf of Bothnia to the sources of the Torne Elf, gives an approximation of real or historic Europe's eastern frontier

THE MASTER ARTIST IMMORTALIZES ON CANVAS THE SPIRITUALIZED FEATURES OF THE GRECO-LATIN TYPE

Raphael, like all geniuses of the brush, employed models from among his own people to represent the Virgin and Child, and in his matchless Sistine Madonna we see a typical Greco-Latin face and figure (see page 450).

and extent. West of that line and north of the Alpine system, an enormous plain, broken only by the watersheds of its rivers, extends to the North Sea.

When the Christian era began, all that plain was covered by forests except the marshlands in the east. That plain, as well as Scandinavia, peopled almost wholly by Teutons, was sometimes called Germania. East of that line was another still more enormous plain, Sarmatia, the home of the Slavs, a race almost unknown. The Alps, northern Italy, a part of Spain, France, and the British Islands were inhabited by Celts. The centers of the Greco-Latins were Greece and Italy.

Thus, at the time of Christ the Alps are the signpost of Europe, roughly pointing out where the races are to be found: north of the Alps, the Teutons; south of the Alps, the Greco-Latins; in the Alps and to the west, the Celts; far east of the Alps, little affected by them, and therefore little influenced by Europe and of as little influence in it, the Slavs and the Finno-Ugrians.

FAIR-HAIRED FOLKS NORTH OF THE ALPS

Since scholars have found it difficult to indicate the great races of mankind and even impossible to agree as to how many such races there are, it is not surprising that they have found it still harder to specify distinctive characteristics of the various subdivisions or minor races. This fact becomes evident as one seeks to indicate the peculiar physical traits of the Celts, the Teutons, the Slavs, and the Greco-Latins. They can be described only in general terms, though such terms, never exact, merely approach exactness.

The ancient Greeks applied to all fair-haired peoples living north of the Alps the common name Keltoi, or Celts. Later these Keltoi were recognized as consisting of two groups, shading off into each other.

The name Celt was then limited to the group which lived nearest the Alps and on the great western plateaus. This group is also called Alpine. In general its peoples were of stocky build and medium height, their heads round, faces broad, eyes gray or hazel, noses rather broad, complexion light, and hair light brown. This is the Celtic type.

The second group had its seat in Scandinavia and spread out southward till it mingled with the first group. Its peoples were in general less vivacious than the Celts, and had longer heads, longer faces, narrower noses, lighter hair, blue eyes, and were taller. Their type is the Teuton, or German, or a less common term, the Nordic.

The Slavs (as Russian philologists assert, from slava, glory, the glorious, or slova, speech, one who speaks) do not appear in history until about the fifth century A. D. They are in general less animate in appearance and facial expression than either the Teuton or the Celt.

In general they are stalwart, the hair and beard abundant, the hands and feet small. But, however it may have been thousands of years ago, there is no Slavic physical type today as there was and is a Teutonic and Celtic type. This fact is probably due to the remarkable faculty in absorbing other races which the Slav possesses and to the different influences of the various regions in which the Slav is found. Dark-complexioned and light-complexioned, short and tall, black-bearded, red-bearded, and yellow-bearded, the Slav in physical characteristics is the most cosmopolitan of men.

The Greco-Latin in its two types, the Greek and the Roman, is familiar; the "dark whites" of Huxley, active, demonstrative, vivacious; in politics and administration, in philosophy and the arts, the teacher of mankind.

THE BEGINNINGS OF RACES SHROUDED IN MYSTERY

The beginning and infancy of any race is unknown, shrouded in mystery which legends confuse rather than illumine. Nevertheless a record, incomplete and fragmentary, of the races of Europe is available for the last two thousand years. This record it will be interesting to review briefly. Otherwise we should be unable to appreciate the complex situation in present-day Europe.

In the year 117 the Roman Empire at-

By Virginia Demont-Breton

"FOLK OF THE SEA"—THE FAIR-HAIRED TEUTON, OR NORDIC, TYPE

Here a noted artist has recorded on canvas the distinctive physical attributes of a people less vivacious than the Celts and possessing longer faces, lighter hair, and blue eyes (see page 450).

tained its largest extent. It embraced all the countries on the Mediterranean as well as a strip of land entirely surrounding the Black Sea. It also included Britain, all the region now occupied by the Rumanians in Transylvania, Rumania proper and Bessarabia, and a still larger territory between the Euphrates and Tigris. Its strongly fortified northern boundaries were the Rhine from its mouth and the Danube as far as where now stands the city of Budapest. More than any other empire mankind had seen, it was the culmination and embodiment of order, law, justice, and civilization.

Beyond its northern frontiers in that northern plain was seething another and a fiercer world. It was uncivilized and incoherent, a mere disorderly mass of humanity, the direct opposite of everything the Roman knew. The Teutonic and Slavic tribes who occupied its unbounded area, incessantly fighting with one another, were so constantly on the move that, except in most general terms, one cannot indicate the location of any.

Photograph from Thomas Whittemore

YOUNG RUSSIA, THE SOLE HOPE OF A GREAT NATION NOW IN THE THROES OF POLITICAL AND MENTAL REBIRTH

The vast dominion which occupies the eastern plain of Europe is inhabited by Slavic peoples—Great Russians, Ukrainians (or Little Russians), White Russians, and Cossacks. The Slav types in this illustration are war orphans (see page 450).

THE BURSTING OF THE HUN TEMPEST

Suddenly there burst upon Europe the tempest of the Huns, a Finno-Altaic people who had been long located in the great Asiatic plains beyond the Caspian. Their numbers prodigiously increasing, they expanded toward the west.

In the fourth century after Christ, as if under a sudden impulse, the whole multitude, in great carts and on horseback, carrying all their possessions, started for Europe. Crossing the Volga, they forced the Alans, a formidable people of mixed blood, to join them.

The Goths, a Teutonic people from Scandinavia, at that time occupied all the territory between the Don and Theiss. Their two branches—the Visi-Goths, or Western Goths, and the Ostro-Goths, or Eastern Goths—had united, and together constituted the mightiest power in Europe outside of Rome. This Empire the Huns overwhelmed.

The Ostro-Goths submitted, biding their time till the tempest passed. The Visi-Goths sought an asylum south of the Danube, in the Eastern Roman Empire, of which Constantinople was the newly founded capital.

The Huns bivouacked for half a century in the center of Europe. On the Danube they founded as their capital the town of Buda, which with Pest on the opposite bank is still the capital of the Hungarians.

Words cannot express the horror with which the Huns were regarded by Romans and Teutons alike. Their tiny eyes piercing flat, bony faces, their low, pointed foreheads, their broad, squat noses, their immense flaring ears, their tattooed and painted skin, their grotesque and distorted forms, made them seem monsters rather than men. Bloodthirsty and indifferent to suffering, destitute of human affection or feeling, they were reported to be the offspring of demons and witches, to have foul spirits at their command, and to be masters of infernal magic.

The so-called barbarian invasions of Europe are rightly reckoned as beginning with this irruption of the Huns. Many migrations had already taken place. Many peoples had assailed the Roman provinces since Brennus and his Gauls ravaged Italy and republican Rome; but each of those invasions and attacks had been an isolated event, coming and passing, the consequences of which were relatively small. None had set the entire continent in commotion.

DISORDER FOLLOWED THE HUNS EVERYWHERE

Before the coming of the Huns, outside the Roman Empire there had been disorder, but a disorder localized and confined. For centuries after the Huns, everywhere, from Scandinavia and the Vistula to northern Africa, continuous and ever-changing disorder reigned supreme. Populations, incessantly displaced, crowded upon one another. Celts, Slavs, Teutons, Huns, and Romans mixed and were lost in the wild confusion.

Attila, King of the Huns, roused his people to resume their career of conquest in the west. His 700,000 fighting men comprised not only Huns, his chief reliance, but contingents from all the subjugated peoples and such other auxiliaries as his skill could attract. The tottering western Empire rallied in one supreme effort under Ætius, "the last Roman general," and brought into the field every man whom piety or patriotism or hope of reward could enlist.

The enormous hosts met on that undulating plain that lies between Chateau-Thierry and Chalons. At stake were not primarily the interests of a State, but the independence and civilization of the men then alive. This is rightly reckoned one of the decisive battles of the world. Though fought almost fifteen centuries ago, these last tragic years give a keen and renewed significance to that battle of Chalons, the first dread battle of the Marne.

Attila did not long survive his defeat. The subject Teutonic and Slavic tribes regained their independence. The hordes of Huns dispersed; some remained on the right bank of the Danube, in the Hungary of today; some settled in the Dobrudja; some wandered back and were absorbed in the kingdoms of their kin.

then rising on the Dnieper and the Volga. They left little behind except an execrable memory.

THE ADVENT OF THE GERMANS

A few years after the disruption of the Huns, Odoacer, chief of the German Heruli and of tribes in alliance with them, forced the last emperor in Rome to abdicate the throne. Thus he extinguished the western Roman Empire, fixed the boundary between ancient and modern history, and eternalized himself as the first northern barbarian to rule in Italy. Indifferent to the weak Slavic tribes scattered in their midst and to the more numerous Slavs in the marshes and forests beyond, no longer hampered by awe of Rome or terror of the Huns, the Teutons were ready for the conquest of western Europe.

When Theodoric, greatest of the Goths, died at his capital, Ravenna, in 526, just fifty years after the extinction of the western Roman Empire, that conquest had apparently been achieved. The definite subjugation of Britain, though not yet complete, was assured by the solid settlements of the Jutes, Saxons, and Angles.

The few Celts of Armorica or Brittany, of Ireland and Scotland, the still fewer Basques in the Pyrenees, and that part of the Balkan Peninsula which the impregnable walls of Constantinople defended, had not been subdued. With those exceptions, all Europe west of the Vistula and Dneister, all from Norway and Sweden as far as and beyond the Mediterranean, was occupied by German kingdoms and ruled by German kings. The western world had become Teutonic. The conquest seemed not only universal but permanent.

The strongest of such kingdoms were those of the Ostro-Goths in Italy and the Visi-Goths in Spain. The one ruled from Sicily to the Danube; the other from the south of Spain to the Loire.

The Goths had become Christians in the fourth century, long before any other Teutonic people. Their conversion, accomplished not by the sword or royal command, but through the preaching of Ulfilas, their great apostle, seems to have affected their conduct and character. In the version made for them by Ulfilas in an alphabet probably of his own devising, they possessed the first translation of the Bible in any Teutonic, Celtic, or Slavic tongue. From it Ulfilas carefully omitted the four Books of the Kings, fearing they would excite further the warlike passions of his countrymen. The Goths were the least barbarous and most humane of all the early invaders. Yet neither of their kingdoms was to continue long.

Residence in a southern climate sapped the vigor of the forest-bred warriors of the north. All Goths, as supporters of the Arian doctrine, met the active opposition of the Church of Rome. Family quarrels wasted resources and energy. In Italy the long-wandering pagan Lombards, a Teutonic tribe, and the Hunnic horde of the Avars replaced the Ostro-Goths. In Spain the Visi-Goths were overthrown by the Arab invasion. So the more than 300,000 Goths disappeared, absorbed among the inhabitants of the two peninsulas. Fragments of the Gothic Bible still exist, precious relics of an otherwise extinct tongue. Even Gothic architecture has no connection with the Goths or with any structure they ever built. It was introduced by purists in the seventeenth century as a term of reproach, meaning barbarous, and applied to all styles not classic.

This story of the Goths is important as affording example of what went on for many, many years throughout the lands once part of the Roman Empire. States, great and small, of various degrees of dignity, were constantly set up by various tribes and races, only to topple over, and chiefs and followers to be absorbed into the native population. Every political division was a crucible of evershifting size wherein races were fused.

As Britain had been a Roman province in hardly more than name, fallen Rome became to the Briton a mere tradition of the past, and little of her majesty was left in England to impress the barbarian invader. Elsewhere the Greco-Latin influence is almost startling in its

"THE SLAV IN PHYSICAL CHARACTERISTICS IS THE MOST COSMOPOLITAN OF MEN"

"Thanks to his remarkable faculty for absorbing other races, he is dark complexioned and light complexioned, short and tall, black bearded, red bearded, and yellow bearded" (see page 450).

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THE SLAVS IN GENERAL ARE A STALWART RACE, LESS ANIMATE IN APPEARANCE AND FACIAL EXPRESSION THAN EITHER THE TEUTONS OR THE CELTS

The Russian is noted for his abundant hair and beard, but these specimens of Slav manhood have just come from the military barber, for the photograph was made in a prison camp in Germany

tenacity. Every European country over which the Roman ruled speaks some form of the Latin language and is administered by Roman law.

THE PERIOD OF INVASION ENDS

The main period of invasion and consequent migration begins with the irruption of the Huns and ends with the Norman conquest of England in 1066. The Crusades, which came on later, were a gigantic episode, not of invasion or settlement, but of departure. Some of the Crusaders straggled back. The vast majority laid their bones by the roadside or in the East and little affected the making of modern European races.

The turmoil, continuous through a score of what Homer would call "generations of fighting men," did not immediately cease, but became spasmodic. Through that period the Teuton and the Greco-Latin center attention, both because they were the chief actors and because of the importance of the stage on which they acted. Wherever the Celt appeared, his rôle is that of one who in vain bravely resists and is all the time pushed farther to the wall.

THE ADVENT OF THE SLAV

The Slav becomes more distinct in the sixth century, at times occupying land which the Teutons had left vacant or at times engaging in attack. The first articulate utterance of the Slavs was when the city of Novgorod, harassed by internal commotions which it could not suppress, sent in 862 the following message to the chief of the Varangians, a tribe of Northmen: "Our country is great and fertile, but everything is in disorder. Come to govern us and rule over us."

There is no reason to doubt the credibility of this event, which, in the case of the Slav, is typical rather than surprising. In 1862 the whole Russian Empire celebrated the millennial anniversary of the coming of Ruric and his brothers in answer to this appeal as the beginning of Russian history.

Lack of self-reliance or of initiative capacity, anciently as now, appeared to be a characteristic almost inseparable from the Slav. Dependence upon some helping or guiding hand has often resulted in his own undoing, while he himself has seemed unable to retain what his industry or courage had won. The story of the Slavic race is crowded with examples of this fact (see pages 450 and 460-464).

A fundamental source of its strength is that, as Professor Hrdlicka remarks, "there seems to be something in the Slav make-up which favors a high birthrate. . . . The Slavs as a whole show the highest fertility among the more important European peoples."

The Eastern Roman or Greek or Byzantine Empire, after an existence sometimes glorious, but sometimes inglorious, through a thousand years, ended in 1453 under the strangling grip of the Ottoman Turks, whose invasion was unlike any that preceded.

The horrors of the Hunnic Empire had been alleviated by its brief continuance; the so-called barbaric invasions wrought not only evil, but greater good by infusing into the veins of worn-out races their own virile blood and rendering possible all that Europe has since been and done. But the Turkish invasion is unrelieved by a single mitigating fact (see also The Ottoman Turks, page 473).

NO UNMIXED RACES AFTER INVASION

Tribal loyalty and personal attachment to the chief characterized the early barbarians. Prestige of victory and hope of gain attracted volunteers and hirelings to any successful leader. The invading armies were thus heterogeneous bodies, made up of adventurers from many sources, but in after years were mistakenly regarded as tribal kin of their leader.

For instance, the men who followed William the Norman to England are usually regarded as Normans. Doubtless many of them were. But, since his own barons balked at the hazardous enterprise, William "had to gather a motley host from every quarter of France." Afterwards success attached the splendor of the Norman name to every man in that motley host.

Most of the invasions by land and almost all of those by sea were made by

A GROUP OF UKRAINIANS, OR LITTLE RUSSIANS, IN NATIVE COSTUME

The Ukrainians work hard, fight hard, and play hard. They are blessed with an elastic temperament. One of their most striking characteristics is their love of the soil, to which they cling with remarkable tenacity. As these costumes show, they have a great fondness for beads, for fringes, embroidery, and gay colors.

men only. In general, invasions solely by men left more enduring results than those by peoples. The tendency was for men, accompanied by their families, to remain apart from the conquered as a distinct class. The single man formed ties among the conquered and therefore was identified with the community.

The essential fact, however, is that, *after the barbaric invasions, there existed no such thing as an unmixed race.* Nor does any such thing exist now. *Racial purity is a figment of the imagination.*

THE TEST OF TONGUES

We have seen that by this universal intermixture of mankind in Europe all racial characteristics were blended, confused, or lost. Therefore no physical test or combination of such tests has yet been found practicable or possible to apply. In consequence, "To the eye of modern scholarship 'language' forms the basis of ethnic distinction."

Language is not an infallible guide. Sometimes it appears unsatisfactory and perhaps misleading. Sometimes it involves difficulties and seems to arrive at contradictions. But there is no other test that rivals it in comprehensive accuracy. Unsatisfactory though the guide may sometimes be, it is far more satisfactory than any other we possess.

In point of fact we possess no other. Webster's New International Dictionary is correct in the definition, "Slav: a person who speaks Slavic as his mother tongue." The Encyclopædia Britannica is correct in saying, "Judged by the language test, and no other is readily available." The authoritative Statesman's Year Book is correct in its invariable system of determining "ethnical elements on the basis of language."

In the quaint Biblical story it was by the test of speech that the men of Gilead at the passage of the Jordan detected the tribe of Ephraim. "It was so that when those Ephraimites which were escaped said, 'Let me go over,' that the men of Gilead said unto him, 'Art thou an Ephraimite?' and if he said, 'Nay;' then said they unto him, 'Say thou Shibboleth,' and he said, 'Sibboleth,' for he could not frame to pronounce it right. Then they took him and slew him."

It was a common racial language, despite local difference, that distinguished the Celts, Teutons, and Slavs from one another. It was the main bond connecting the several members of each of those same races. "Thy speech bewrayeth thee" was the identification of each tribe.

Sometimes the language test seems to fail glaringly, as when one hears the Balto-Slavic Prussian speaking German as his mother tongue, or the Celtic Irish speaking English. Yet out of the great total such anomalies are comparatively rare.

A NEW AND VITAL INTEREST IN EUROPE'S RACES

The races of Europe are today invested with a vivid interest and a nearness they never possessed for us before. Through more than four agonizing years in thought and perhaps in person we have lived in their very midst. Peoples little known have appeared on the horizon and peoples best known have acquired a fresh significance. Nor, though the hour of victory has come, will our strained attention relax.

The races of Europe are now in agitation, less superficial but more profound and as intense as that by which they were convulsed by the Hun fifteen centuries ago. The Old Order has passed away with the millions dead. A new Europe is in the making. Neither a year nor a generation will suffice to make it. None of the now-living will behold it when made. The Peace Conference will render its august decisions, and its members will depart, but the races will remain on the spot where on them the making of the New Europe will devolve.

Europe, though so old, is for the greater part young and inexperienced in self-government and political duty and opportunity. The gait of more than one newly enfranchised people will resemble the uncertain walk of a just-awakened child. No marvel if its liberty seems at times license, and freedom for one's self a safe conduct to avenge and oppress. The progress of the most advanced na-

tions to their present height has not been unattended by mistakes and falls.

The moral solidarity of mankind has of late been made manifest by a demonstration without precedent in history. The world's heart might be wrung at the exalted sacrifices of the French, Belgians, and Serbians, but it was the world's conscience which ranged all peoples, whose expression was possible, upon one side, except the four nations in which apparent certainty of profit calloused any conceivable sense of shame. The four responsible for the inexpiable crime of the last war have not an ally or friend on earth.

The New Europe will be built upon a more enduring foundation stone than was the Old. Force and force alone was the sanction of the Old Order. The New Europe will rest upon the solid rock, the sublime truth proclaimed by Mirabeau, "Right is the Sovereign of the World."

To establish that truth the Entente Allies have lavished their hard-earned wealth and the priceless blood of millions of their sons. The absolute victory of arms being accomplished, their responsibility to mankind enters upon its second stage: to safeguard from a still strong, unrepentant, and subtle foe what has been achieved.

All the Allies are one in principle, purpose, and idea. Yet, because of their greater strength, upon the British, French, Italian, and American democracies this responsibility rests.

Many a political stumble is in store, much turbulence, perhaps bloodshed, before all the enfranchised appreciate and enjoy justice and order and liberty. But through it all let not our faith and sympathy waver for even the most ignorant and the longest oppressed.

EXPLANATION OF THE RACE MAP

Our map shows, pictorially, the principal facts regarding the distribution of the peoples of Europe and their relationships, based on the researches of Deniker, Hrdlicka, and many other savants.

Racial boundaries differ from the political boundaries of provinces and States. The latter are definite and exact, determined often on mathematical lines. The former are always indefinite and elusive. Between two adjacent races there is always a neutral zone which belongs to both and is the property of neither—a border region, where the two fade off into each other by invisible degrees.

For the first time in human experience, the effort is being made by the victors after a great war to trace the new frontiers in accordance with the racial aspirations and affinities of the peoples involved. Because of this impossibility of defining exactly the limits of a race, many heart burnings are inevitable in the new adjustment of European boundaries.

Professor Hrdlicka estimates that there are in Europe from 145 to 150 millions of people of Slavic stock, 144 to 148 millions Teutonic, and 125 to 127 millions Greco-Latin.

Our description of the races of Europe begins farthest east. First taking up the races of the once mighty Russian Empire, we next attempt the Rumanians, then the races of the Balkan Peninsula, afterward those of the once so-called Central Empires, and thus on, following the Map of the Races, until we reach the British Islands.

THE RACES OF THE RUSSIAN DOMINIONS*

Taken as a whole, the Russians, as in the days of Peter, are an inchoate mass. Whether the stern Tsar, who sought to knout his subjects into civilization, was in truth a benefactor to his people is a problem. At least he made it certain that, when an autocratic hand was no longer felt, component parts, not welded but merely held together by brute force, would fall asunder. The spectacle of such disruption we behold today.

The principal parts, no longer component, are the Great Russians, the Little Russians,

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Land of Unlimited Possibilities," by Gilbert Grosvenor (November, 1914); "Russia's Democrats," by Montgomery Schuyler, and "The Russian Situation," by Stanley Washburn (March, 1917); "Russia from Within," by Stanley Washburn (August, 1917); "A Few Glimpses into Russia," by Zinovi Pechkoff (September, 1917); "Voyaging on the Volga," by William T. Ellis (March, 1918); "Russia's Orphan Races," by Maynard O. Williams (October, 1918), and "The Rebirth of Religion in Russia," by Thomas Whittemore (November, 1918).

TWO PICTURESQUE EXAMPLES OF UKRAINIAN WOMANHOOD

The Little Russian branch of the Slav race numbers 30,000,000, residing chiefly in the territory esteemed most sacred in Russian eyes. Kief, the Holy City of the Slav dominions, is the metropolis of the Ukraine. This region is likewise the home of Russian folk-lore. The love songs of the Little Russians are distinguished by their tenderness (see page 463).

Photograph by Borg Mesch

THE LAPPS, THE ROUNDEST-HEADED PEOPLE IN EUROPE

For centuries they have made their home on the permanently frozen, treeless wastes of the tundra of Norway, Sweden, and Russia. As a result, they are generally dwarfed both in body and mind. They do not average more than four feet seven inches in height, and even the children have faces which are frequently drawn and ugly, as if with age (see p. 466).

the White Russians and the Cossacks, all Slavs, all speaking some form of Russian Slavic, all members or dissidents of the Eastern Orthodox Church, but each group of a different type from the rest (see pages 450 and 457).

THE GREAT RUSSIANS

The Great Russians spread extensively from Moscow as their historic center. The river Moskwa gave its name, not only to the capital which stands upon its banks but to the Muscovite Empire and to the Tsars of Muscovy. Through the East a Russian is always called a Muscov. Saint Petersburg or Petrograd, always foreign, kindled no love or devotion. Moscow delivered the people from two centuries of oppression by the Tatars of the Golden Horde: in 1613 crushed the Poles and gave the nation a new birth: in its flames consumed the Empire of Napoleon. It is still "Holy Mother Moscow."

Other Russians are merely accretions, added by conquest or voluntary submission. The Great Russians are the real Russians. Among them are seen some of "the best examples of the Caucasian type." They are industrious, unambitious, sluggish, dreamy, patient, devout, disliking responsibility, indifferent rather than careless, impractical, pacific. Theirs is the only national hymn which breathes as its chief note a prayer for peace. Yet, when the order comes, no men more readily flock to the colors. No soldiers are braver or endure longer.

The Great Russians are helpless when without an object for their devotion. Formerly they had two: God and the Tsar. The Tsar has been taken away, and in the present confusion, according to the Slavic proverb, "Heaven is far off." So they flounder for a time in a political and religious quagmire, unable as yet to feel solid ground.

By expansion, as the more prolific rather than by fighting, they have pushed the Finns, who occupied more than half the Russian plain, still further north. In return their physique and temperament have been profoundly affected by constant blood intermixture with the Finns and in less degree with the Tatars. Their frames are well knit and muscular, hair and beards thick and curly, nose pronounced, eyes blue or brown, complexion florid.

Altogether they number about 80,000,000, a homogeneous whole, numerous enough to constitute a great State, inland except as it touches the Arctic, with "No window upon the West." They would be probably content if a chain of buffer States from the Black Sea to the Gulf of Bothnia should shut them off from European connection. Tolstoi, Turgueniev, Dostoievski, Vereshchagin were all Great Russians.

THE UKRAINIANS *

The Little Russians or Ukrainians number about 30,000,000. Theirs is the territory esteemed most sacred in Russian eyes.

To Kief, their principal city, Oleg, brother and successor of the Varangian Ruric, transferred the royal dignity from abandoned Novgorod. The life of Queen Olga, "The Saintly," the subsequent conversion to Christianity of the King, Saint Vladimir, and of the Russian people at Kherson, and all the heroic history of the Russian Church, were wrought in the Ukraine. Militant as well, expeditions thence wrested tribute from the Byzantine Empire, and Oleg, the king, suspended his shield in triumph from the Golden Gate of Constantinople.

The proximity of Tatars and Turks and the resultant strain of blood have rendered the Little Russians more warlike than their northern brethren. They are of slighter, shorter figure, and less robust. Their darker faces have more expression. They are less plodding, more volatile and imaginative, love music and are strongly attached to family and home. Gogol, born at Poltava, gives many attractive pictures of the Little Russians.

Their country in 1320 was conquered and annexed by the Poles, who called it Ukraine or "barrier" against the Tatars. The part east of the Dnieper was restored to Russia in 1686 and the western part in 1793.

THE WHITE RUSSIANS

The White Russians derive their name from their pale faces or from the white clothes they habitually wear. They number not over 5,000,000 and are found usually in the neighborhood of the Lithuanians. They are not strong-bodied or forceful, seldom exhaust themselves by overwork and are generally poor. They have no towns, hardly any villages, but live in the woods.

Always the victims of oppression, they show its results in appearance and habits. Their dialect differs greatly from that of the Great or Little Russians.

THE RESTLESS, FAITHFUL COSSACKS

The southern Ukraine is "the savage," the "boundless steppe," "The Wilderness" of Sienkiewicz' masterly romance, "With Fire and Sword." Thither, when the Ukraine was Polish territory, flocked thousands of escaped serfs and outlaws, who gradually separated into groups. Their headquarters were just below the cataracts of the Dnieper. They were called "Kazaki" from a Tatar word meaning freebooters or adventurers.

Proscribed by the Roman Catholic Polish nobility, they often allied themselves with the Tatars of the Crimea and later with the Russians, Eastern Orthodox like themselves. They were the real masters of the Ukraine, which their hetman, Chmielnicki, caused to become again Russian. A later and traitorous hetman, the Mazeppa of Byron's poem, endeavored in vain to deliver it to Charles XII at Poltava.

Always restless but always faithful to the Tsar, they emigrated to the Crimea and then farther east. They were made "Guardians of the Frontiers." They now consist of ten distinct bodies, of which the Cossacks of the Don, the Usuri, Orenburg and Astrakhan are the most important.

Their lawlessness has abated, but not their warlike instincts or their loyalty. The fallen Empire had no more faithful soldiers than its 320,000 mounted Cossacks.

In time of peace they are farmers, cattlemen, horse breeders, fishers, raisers of bees, cultivators of vines. Among them popular education stands on a higher plane than elsewhere in Russia. Relatively they have more schools and more children in them. Industrious, thrifty, domestic, they do not deserve, despite their origin, the opprobrium in which they are held by Europe.

THE RACES OF THE BALTIC PROVINCES

Upon the map, east of the Baltic, between the Gulf of Finland and the river Niemen, a territory of about fifty thousand square miles is indicated, inhabited mainly by Esthonians, or Esths, Letts and Lithuanians. This territory forms a natural geographic unit. Commanding the eastern Baltic and the southern approaches to the Gulf of Finland, and hence to Petrograd and interior Russia, it is of great strategic importance. Probably no part of northern Europe has seen fiercer fighting or been more often drenched with blood. This geographic unit corresponds in the main with the famous Baltic provinces, which comprised ancient Esthonia, Livonia, and Courland. It forms a deep semicircle around the historic city of Riga, its guardian and sentinel.

In general the country is low and marshy, dotted with innumerable lakes and covered with dense forests wherever lake and marsh permit trees to live. Toward the middle a little scarred plateau rises a few hundred feet, which the native poets called the "Livonian Switzerland."

The entire population is not over 3,100,000, of whom there are about 1,150,000 Esths, or

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Ukraine, Past and Present," by Nevin O. Winter (August, 1918).

Photograph by Francis P. Farquhar

A GROUP OF GREEK PEASANTS IN THE REGION OF PARNASSUS (SEE PAGE 477)

Lineal descendants of men who two thousand years ago were the custodians of the world's art, culture, and science, these peasants, uncouth in appearance yet friendly and hospitable, possess the heritage of a glorious past.

Esthonians, mostly in the north; 1,500,000 Letts and Lithuanians, toward the south, in Livonia and Courland; 200,000 Germans, and 100,000 Jews. The Russians at no time constituted more than 2 per cent of the inhabitants.

THE ESTHS

The Esths are a Finno-Ugrian people, once savage and adventurous, terrifying the Baltic with their piracy, constantly attacking and attacked by the Danes and Swedes. Their final subjection by the Brothers of the Sword and their enforced acceptance of Christianity crushed their spirit and rendered them serfs to their German masters.

The Esths outnumber the Germans in the old Province of Esthonia twenty-nine to one; yet nine-tenths of all the land is held by Germans. In the former Province of Livonia the Esths constitute nearly half the population, while the Germans are less than one-fifteenth. There the land is divided into estates averaging over ten thousand acres in extent, none owned by an Esth or Lett, but almost invariably by a German. The Russian Government at times endeavored by agrarian laws to alleviate the condition of the peasant. Such efforts failed against the stolid resistance of the great proprietors.

The Esths have clung devotedly to their national language, the sole inheritance from their past. They love poetry and song. Their physical characteristics are Finnic; their faces short, broad, beardless; their foreheads low, mouths small, arms long, legs short. Despite their extreme poverty, education is relatively advanced. All but 4 per cent are Lutheran Protestants.

Since the sudden universal awakening in 1918, the Esths or the land-owners have been insistent upon national recognition. But ownership in the land is their greatest need.

THE LETTS

The Letts are one of three cognate tribes, distinct from any other in Europe, which once dwelt side by side on the eastern shores of the Baltic; farthest west, the Borussi, who became the Prussians; toward the middle, the Lithuanians proper, and farthest north the Letts. So much do the two latter resemble each other in personal appearance, language, occupation, and the hardships of life that foreigners usually identify them as one. No distinction of the

two is made in the census. They are, however, separate peoples, though it is not easy even for themselves to specify wherein the difference lies. Until of late they have thought little of national existence. Circumstances denied them a large place in history. Almost all are Protestants. Luther's Greater Catechism was the first book printed in Lettish, which was not reduced to writing before the sixteenth century.

THE LITHUANIANS

"In the eyes of the ethnologist, Lithuanian is the most important language of Europe." It is allied to the western branches of Slavic, resembles Latin more than it does Celtic or German, and is most like Sanscrit. Into its grammar and vocabulary have filtered some Slavic forms and many Slavic words.

Scholars, baffled by the mystery of Lithuanian origin and language, have applied to both people and tongue the convenient term Balto-Slavic. Dwellers in swamps and forests, their racial character has been little modified.

In the thirteenth century they developed an independent State, which finally extended from the Baltic to the Black Sea. They suffered horribly from the merciless Brothers of the Sword and the Teutonic Knights. The Teutonic Order, or Teutonic Knights, of St. Mary's Hospital at Jerusalem and the Knights, or Brothers, of the Sword, at first purely philanthropic, were organized during the Crusades. Afterward installed on the Baltic and become military, they employed fire and sword to Christianize the wild natives and reduce them to servitude.

The Lithuanians remained pagan until their Duke Jagellon, in 1386, married the beautiful Polish Queen Jadvidja, shortly afterward accepted Christian baptism and ordered his obedient subjects to do the same.

Thenceforward they shared all the vicissitudes of the Poles. It was a Lithuanian commander, with an army mainly Lithuanian, who inflicted on the Teutonic Knights the crushing defeat at Tannenberg in 1410.

Poverty and wretchedness have been for centuries their almost invariable lot. Though an agricultural people, the land is almost wholly held by great Polish and German owners. The Russian land laws, devised in the interest of the peasantry, accomplished no more for them than for the Esths and the Letts. Many Lithuanians have emigrated to the United States, where they show themselves simple, honest, and industrious. With few exceptions, they are Lutheran Protestants.

Excellent soldiers, they fought valiantly in the Russian ranks during the last war. About

Photograph by Erdelyi

THROUGH HER VEINS FLOWS THE BLOOD OF MANY RACES WHICH HAVE MINGLED AFTER INVADING THE BALKANS

After the barbaric invasions there existed no such thing as an unmixed race. Particularly is it true in the Balkan Peninsula that racial purity is a figment of the imagination (see page 457).

half of the 3,000,000 Lithuanians live outside the limits of the former Baltic provinces.

Lithuanians and Letts today feel the thrill of national consciousness. They would like to stand before the world as independent nations. Whether the action taken to this end is confined to the foreign land-owners, whose power and dignity would thereby be increased, or whether the people have any share in it is unknown. Until agrarian conditions are radically changed, the political existence of the State will practically benefit neither Lithuanian nor Esth nor Lett.

THE FINNO-UGRIANS

The Finno-Ugrians fifteen hundred years ago occupied the northern half of the Russian plain. Slavic tribes, advancing from the south, split into them like a wedge, pressing some to the east, but the great majority to the northwest toward the Gulf of Bothnia. Their numbers have constantly diminished through amalgamation with the Slavs.

On the east are now found the sparse settlements of the Voguls, who speak a peculiar dialect; the Cheremissians on the Volga, the Permians, shrewd traders, and the more important Mordvinians. The identity of the widely spread but fast disappearing Samoyedes, now no more than 4,000 persons, is in doubt.

On the west the Esths in Esthonia, the Choudes around Novgorod and the Karelians, north and south of Petrograd, are historically of greater interest.

THE FINNS *

By far the most numerous and most civilized of the Finno-Ugrians, not reckoning the Finno-Ugrian Magyars (see page 497), are those who call themselves Suomi, but whose relative importance Europe recognizes in applying to them the generic name of Finns. No other of their race, except the Magyars, enjoys a political existence.

Their country, Finland, has an area of 125,689 square miles, largely lake and island, situated between the Gulfs of Finland and Bothnia and included between 60° and 70° north latitude. In the twelfth century it was conquered and the people converted to Christianity largely by Bishop Henry, a supposed Englishman, who being killed in fight was canonized and as Saint Henry has become the patron saint of Finland. Since then until last year it has never known independence. Constantly fought over by Sweden and Russia, it with the Aland Islands became a semi-independent Grand Duchy of the latter in 1809. The stubborn opposition of the people always thwarted attempts at russification. In December, 1917, the Finnish Diet declared Finland an independent republic, which as such has been recognized by Russia, Sweden, Norway, France, Spain, Denmark and Germany.

In general the Finns are short, have flat faces, round heads, prominent cheek-bones, oblique eyes, thin beards, variously hued hair and not clear complexions. Education is general and highly advanced, though three per cent of the people are paupers.

Except 50,000 members of the Eastern Orthodox Church and less than a thousand Roman Catholics, all the 3,500,000 inhabitants are Protestant Lutherans. Among them are about 400,000 Swedes who predominate along the coast. Helsingfors is a Swedish city. Not including the Magyars, there must be nearly 4,500,000 Finno-Ugrians in Europe.

THE LAPPS

The Lapps are pathetic figures to foreigners. Though closely related to the Finns, they and their ancestors in their wanderings have never known any part of the world except the permanently frozen sub-soil and the tree-less wastes of the tundra. In consequence they are dwarfed in body and mind.

They average only four feet, seven inches in height. The faces, even of the young, are drawn and appear old and the whole frame often is undeveloped and misshapen. No shade of color in hair or eyes or even in complexion can be considered typical, there is so great variety. They are said to be the roundest-headed people in Europe.

Some few along the rivers or seacoast are fishermen or cattle breeders, but the most for food, occupation and subject of thought are dependent on the reindeer which seems made for them as they for it. In Norway there are about 17,000, in Sweden 7,000, in Russia twice as many. They are steadily decreasing in number, the little civilization that has reached them not being altogether beneficial. Those in Russia are reckoned Eastern Orthodox and those in Scandinavia Protestant, but how far this secretive people have really abandoned pagan beliefs and practices is not known.

The word Lapp is supposed to be Swedish and to mean enchanter, but others suggest that it is derived from the Finnish lappa, meaning "land's end folk." Long regarded as sorcerers and necromancers, they appear in Norwegian tales as proficients in the black art.

THE PEOPLES OF THE CAUCASUS *

The peoples of the Caucasus present a bewildering but a fascinating study. Any attempt to classify or even discuss them in limited space is futile. The official Russian figures estimate them according to races as about 5,000,000

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Where Women Vote," by Baroness Alletta Korff (June, 1910).

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "An Island in the Sea of History" (Highlands of Daghestan, Caucasus Mountains), by George Kennan (October, 1913).

PRIDE OF RACE IS A STRIKING CHARACTERISTIC OF THE RUMANIAN

Peasant and noble alike of this robust people are jealous of their descent from the thousands of Roman families and Roman soldiers who more than sixteen centuries ago settled the prosperous colony beyond the Danube known as "Dacia Felix" (see page 471).

TURKS TALKING SHOP, RELIGION, AND POLITICS IN THE VICINITY OF THE DOCKS AT CONSTANTINOPLE

The Tatar type of the Ottoman Turks has been greatly modified during the last five centuries through the fact that their harems have been replenished constantly by women from every nation. The accession of Christian and Jewish apostates has also modified the Tatar blood (see page 473).

Aryans, 50,000 Syro-Arabs, 1,900,000 Ural-Altaians, and 2,500,000 "Caucasians," the latter term in this connection meaning simply nondescripts. The disproportion of the sexes is marked, there being only 91 women to every 100 men.

Looking out from Mount Elbruz, a peak 3,000 feet higher than Mount Blanc, we have on the northwest 200,000 Circassians, splendid physical types of men and women, Moslems, without written laws or written language, hospitable in the extreme, revering old age, theft no crime, but discovery in theft a disgrace, personal and tribal independence a passion. Women are little esteemed except as objects of sale. The Circassian slave trade involved no sense of disgrace in the mind of the seller or the sold, as the girls were carefully nurtured for a place in the harem.

On the east 600,000 Lesghians, dwellers in Daghestan "from the beginning," an agglomeration of tribes with an equal number of dialects, devoted Moslems, brave to recklessness, of almost exhaustless endurance, of stalwart figure, but of every possible hue of eyes and hair, marked diversity of skull, tenacious of rights, a people incarnate in their leader, Shamyl, who resisted Russia for twenty-five years.

In the southeast 270,000 Chechens, wild and fierce, of imposing presence, generous and friendly, their religion a peculiar blending of Islam and Christianity, a people much resembling the Circassians.

Directly south of Mount Elbruz, to whose crags Prometheus was bound, 1,350,000 Georgians, a most interesting people, who claim descent from Togarmah, the great-grandson of Noah. Christianized about 330 by the nun Nuna, they have always, despite continuous invasion and persecution, remained steadfast to their faith. In 1799 they and their last king became Russian subjects as the only means of escaping the Persians. Their origin and language present problems unsolved. Perhaps not Indo-European, they certainly are not Ural-Altaians. Physically they are of the purest Caucasian type, the women remarkable for their stately beauty.*

In Georgia was fertile Colchis, the land of Medea and the Golden Fleece, of Jason and the Argo, considered by some ethnologists the original home of the Greeks.

THE ARMENIANS †

The presence of Armenians in every country, accentuated by their prominence, antiquity, and sufferings, requires their inclusion among the races of Europe. They belong to the Iranian branch of the Indo-European family.

The map indicates the region in Asia which the greater number of the Armenians now inhabit; it also affords a general idea of the situation and extent of their ancient kingdom. In only a small part of this region do the Armenians now constitute a majority of the population, which largely consists of Turks, Kurds, Chaldæans, Persians, Syrians, and Bedouins.

They claim to be the oldest people in the world. Their national name is Haig, from *Haig,* their traditional progenitor, a great-great-grandson of Noah. Their country is the doorway and thoroughfare between the East and West. It has been tramped over by Assyrians, Medes, Persians, Greeks, Parthians, Romans, Byzantines, Mongols, Saracens, Seljuks, and Ottoman Turks, successively fighting for its possession.

At the birth of Christ the Armenians were Parsees, fire-worshippers, followers of Zoroaster, but soon after the Crucifixion some became Christians. The preaching of Saint Gregory the Illuminator converted their king, Tiridates, who, with his people, received baptism at the end of the third century, thus antedating by several years the conversion of Constantine. Hence the Armenians were the first nation to accept Christianity, their king was the first Christian sovereign, and the Gregorian Armenian is the oldest purely national church.

In the fourth century Mesrob invented, or adapted from the Greek, the Armenian alphabet, still in daily use. He also began the translation of the Bible, completed in 410. A religious character, never lost, was early imparted to Armenian literature. This is felt in the writings of their great historian, Moses of Khoren.

Since the sixth century the Armenians have never known independence. At times they experienced periods of tranquillity; but, as subjects of rapacious and sanguinary peoples and without protection or security of any sort, their property and lives through fourteen hundred years hung upon a hair. Even before the coming of the Turks, there was no outrage or horror which they had not many times undergone.

In mental keenness and manner of life they were the superiors of their rulers, whose cupidity and resentment their intelligence, industry, and thrift often inflamed. With a devotion surpassed by no age or country, they remained all the time steadfast in their Christian faith through a martyrdom of centuries.

There has long been a continuous emigration from Armenia to Constantinople and the West, of late to the United States. Not a few as merchants or bankers have amassed wealth. More than one has served as financial minister to the Sultan. Many are skilled artisans, architects, and engineers.

An Armenian community is marked for its love of education. To every Armenian church is attached a school. Armenian students excel in mathematics. In general, whatever faults

* See "Russia's Orphan Races," by Maynard O. Williams, in the NATIONAL GEOGRAPHIC MAGAZINE (October, 1918).

† See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Armenia and the Armenians," by Hester Donaldson Jenkins (October, 1915), and "Russia's Orphan Races," by Maynard O. Williams (October, 1918).

A CHRISTIAN MAIDEN OF THE ALBANIAN MOUNTAINS

Her religion is indicated by the fact that she is unveiled. Her country is rugged and in the main inhospitable, and her domestic life is fraught with many hardships; but in one particular the Albanian woman is more fortunate than many of her sisters of the Balkan Peninsula. She is honored and revered by her menfolk, and nowhere else in Europe

A MOHAMMEDAN ALBANIAN OF SCUTARI

In his native costume of cream-colored homespun, trimmed with black, and accoutred like a veritable walking arsenal, the Albanian is a picturesque figure. He calls himself "son of the mountain eagle," and, although surrounded by hostile peoples, he has succeeded for centuries in maintaining his racial integrity to a remarkable degree. The Alba-

the Armenian has can be traced to his long subjection and his environment.

Most are dark, almost swarthy, with thick, black hair, heavy brows, generous noses, muscular and stocky frames, but among them one finds endless variety of form and feature. Not seldom one sees an Armenian woman with the pencilled eyebrows, chiselled features, and Madonna-like beauty of the Italian; or an Armenian man tall, lithe, handsome, finely pro portioned, fit model for the sculptor.

In conversation the Armenian language often seems jagged and harsh, but when heard in one of their ancient churches from the lips of some eloquent preacher, like the Patriarch Nerses, it sounds majestic and awe-compelling, like thunder among the crags.

The massacres of the last four and a half years and the deportation of hundreds of thousands of helpless victims, all countenanced by Berlin, have been the most terrible experiences even in Armenia's tragic life. The unimpeachable evidence of atrocities set forth in the Bryce Commission's report on this theater of war, and the testimony of Henry Morgenthau, former United States Ambassador to Turkey, comprise one of the most appalling indictments of the Prussian-directed Turk in the history of mankind.

THE TURKO-TATARS

The Turko-Tatars in Russia number about 4,700,000, in great part remnants from the baleful Empire of the Golden Horde, that held Russia in subjection from 1237 to 1481, and of the Khanate of the Crimea.

The penniless Bashkirs, the snub-nosed Kara-Kirghiz and the Kirghiz-kazaks, the broad-eared Kalmucks, the Kipchaks of Kazan, and the more active Nogais have been restrained and tamed. Some are Moslems, some Buddhists, some Sheitan worshippers, some nomadic, some sedentary. The chief interest they excite is anthropological. To the ethnologist they are merely reminders of a merciless past.

THE RUMANIANS*

It is a surprising fact that, adjacent to the Black Sea and the mouth of the Danube, surrounded by powerful Hungarian and Slavic peoples, separated from Italy and all things Italian by five hundred miles of distance and sixteen hundred years of time, we find, in the words of Ubicini, "A people compact and homogeneous, whose features, language, monuments, customs and very name show its Italian origin."

Two expressions in a well-known handbook condense the connection of ancient Dacia, the modern Rumania, with Rome: "A. D. 107, Dacia made a province." "A. D. 274, Dacia given up to barbarians."

The first suggests the settlement of thousands of Roman families, the universal speaking of "lingua rustica" by Roman soldiers, and the influx of prosperity that caused that flourishing Roman colony to be called "Dacia Felix." The second suggests the abandonment of Dacia to that unbroken chain of evils and misfortunes from which the people were not delivered until the middle of the last century.

Nevertheless, such was the virility of the Roman language and civilization and such the persistence of the Dacians, that from them have been evolved the Rumanians of today.

The name Vlach, by which, until recently they were commonly known abroad, is the Slavic rendering of Romaioi, Romans, which the Dacian peasants call themselves but which also means robust or strong. Their numerous compatriots who inhabit the Pindus range in Greece are always spoken of as Kutzo-Vlachs or Lame Vlachs.

Yet, while the Rumanians are Latin in all else, geography rendered them communicants of the Eastern Orthodox Church.

More than once, when invaders held their country in subjection for generations, the people took refuge across the Danube or in the mountains. Their historian, Kogalnitchano, asserts "The Rumanians would not espouse the women of another nation," and with satisfaction quotes Gibbon as saying, "The Vlachs are surrounded by barbarians without mixing with them."

After the last Tatar invasion, in the thirteenth century, when the nomads, sated with slaughter and booty, had withdrawn eastward, the people gradually came back and settled the provinces of Wallachia on the Danube and Moldavia between the Carpathians and the Pruth. Both were conquered by the Turks two hundred years later. Turkish governors, called hospodars, exploited the provinces.

The intellectual national awakening of a hundred years ago hastened their deliverance. Europe guaranteed the two provinces autonomy in 1856. Three years afterward they were united as the Principality of Rumania. The nomination of Carol, a Hohenzollern prince, as the new ruler was approved by popular vote, 685,069 persons voting "Aye" and 224 voting "No." The choice was happy. Prince until 1881, then King until 1914, he and the Queen, "Carmen Sylva," deserved and enjoyed the love of their people. The present Queen Marie is a charming, patriotic writer.

Allied with Russia, Rumania took an effective part in the Russo-Turkish war of 1877-8, for which she was ill-requited, being obliged to cede Bessarabia to Russia in exchange for a portion of "the land of mountains, fens and barren steppes," called the Dobrudja. A further portion was acquired after the Balkan war of 1913.

The Dobrudja, situated between the lower Danube and the Black Sea, is capable of de-

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Notes on Rumania" (December, 1912); "Rumania and Her Ambitions," by Frederick Moore (October, 1913); "Rumania, the Pivotal State," by James Howard Gore (October, 1915), and "Rumania and Its Rubicon," by John Oliver La Gorce (September, 1916).

NICHOLAS I, SURROUNDED BY A GROUP OF HIS HANDSOME MONTENEGRIN SUBJECTS, LAYING THE FOUNDATION STONE OF THE CETINJE CATHEDRAL

For more than five hundred years a group of Serbians maintained their independence against all assailants in the fastnesses of the Tserna Gora, the Black Mountain, or Monte Negro, on the eastern shores of the Adriatic, just north of the Albanians. They are the Montenegrins, noted for their heroism and their love of freedom (see page 484).

velopment and is of military importance, Turks, Tatars, and Circassians are numerous in its heterogeneous population.

In Rumania are found a great number of Hungarian, German, Bulgarian, and Serbian settlers. The entire population is 7,508,000. In the adjacent provinces of Bessarabia, Bukovina and Transylvania, Rumanians predominate. In Bulgaria, Greece, Hungary proper and Serbia are many more. Their entire number, in and outside the kingdom, is probably about 13,000,000.

The excess at birth of males over females is greater among the Rumanians than among any other European people except the Greeks. Tendency to such excess is noticeable among most Greco-Latins.

The Rumanians have special fondness for the French. They are not displeased when their country is spoken of as an Eastern France, and they themselves call their capital, Bucharest, "the Eastern Paris."

Rumania, like Belgium, Montenegro, and Serbia, has had her full share in the tragedy of the just-ended war. Surrounded by foes, isolated as she has always been, further struggle only intensifying the horrors of the defeat, she submitted for a time to her conquerors.

THE RACES OF THE BALKAN PENINSULA *

The Balkan Peninsula is the most eastern of the great peninsulas of southern Europe. It derives its name from the Balkan Mountains, its central and most distinctive feature. Along the Danube, its northern boundary, ran the natural route of migratory peoples, many of whom were diverted southward by the fertile and extensive plain which slopes from the Balkans to the river. To the west and south sharply defined mountain ranges offered abode or asylum in their limited plateaus and fostered the growth of individual communities.

No other equal area of 185,000 square miles in Europe presents equal variety of contour and surface and natural resources and, in consequence, such diversity of person and occupation among its inhabitants.

The occupants of the peninsula could be held together only if they constituted a single people, united by common sentiments, or if all were under the control of a single supreme authority which none of them could resist. As far as history knows, no united people has ever dwelt upon it. Seldom and only for a time, has any supreme authority existed in it.

In every age the Balkan Peninsula is a maelstrom of races, peoples, languages, religions, and of all conceivable ambitions and passions, dashing and breaking themselves upon one another.

The Balkan Peninsula includes Turks, Albanians, Greeks, Bulgarians, Serbians, and Montenegrins.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Changing Map of the Balkans," by Frederick Moore (February, 1913).

The political boundaries of these States and provinces only vaguely coincide with the boundaries of race and language. Instead, everywhere there is a widely overlapping borderland, in which languages pass into one another, where adjacent States put forward extravagant but often honest claims, and where many of the inhabitants themselves do not really know who they racially are or where politically they should belong. In consequence, an active propaganda has been carried on for years and large sums of money expended to develop inclinations.

THE OTTOMAN TURKS *

The early life of no other Eastern people is so definitely known as that of the Ottoman Turks.

Led by Ertogrul, a Tatar chief, nearly four hundred pagan nomad families wandered into Asia Minor about 1230. They had fled from Khorassan at the invasion of Jenghiz Khan. Asia Minor at that time was broken up into numerous petty States and feudal districts, of which the moribund Seljuk Sultanate of Iconium, or Roum, was the most considerable.

Becoming voluntary converts to Islam and faithful allies of the Sultan Ala-Eddin, the four hundred saw their prestige and power rapidly increase. Moslems and Christian and Jewish renegades flocked to their tents. In 1281 Osman, or Othman, succeeded to leadership. His name, signifying "Breaker of Bones," was of happy omen to his ferocious followers.

On the death of Ala-Eddin, last of the Seljuks, his kingdom broke into many fragments. Osman undertook to conquer them all and proclaimed himself "Padiskhahi ali Osmani," sovereign of the Ottomans. His people have ever since called themselves Ottomans, regarding as insult or injury the name Turk or barbarian, applied to them by the Arabs and by the Europeans in general. The Arabs, who disdain the Turks, employ the name with design.

The gradual extension of the Ottoman Empire was due to its first seven sultans, each succeeded by his son, all ruthless destroyers. The seventh, Mohammed II, the Conqueror, captured Constantinople in 1453. Continuous subsequent conquests, reaching from Persia to the Atlantic and the Straits of Bab-el-Mandeb, terrified Europe. The English prayer-book to this day, in its Good Friday Collect, makes deprecatory intercession against the "Turks."

Constantly receding since the defeat at Vienna by the Polish John Sobieski, in 1683,

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Young Turk," by Rear Admiral Colby M. Chester (January, 1912); "Grass Never Grows Where the Turkish Hoof Has Trod," by Sir Edwin Pears (November, 1912); "The Possible Solutions for the Eastern Problem," by Viscount James Bryce (November, 1912); "Life in Constantinople," by H. G. Dwight (December, 1914), and "Constantinople and Sancta Sophia," by Dr. E. A. Grosvenor (May, 1915).

Photograph by Frederick Moore

SERBIAN PEASANTS OF JUGO-SLAVIA

To unite all the Jugo-Slavs has long been the aspiration of leaders among the Croats and Slavonians as well as those in the Kingdom of Serbia. The ambitious program of these nation builders includes the union of Croats, Slavonians, Dalmatians, Bosnians, Helvats, Montenegrins, and Serbs into one State. One of the greatest obstacles to the proposed federation is the religious antagonism evidenced toward one another by adherents of the Eastern Orthodox Church, the Roman Catholics, and the Moslems. Powerful factors exist which are favorable to coöperation, however. The peoples are racially one, and they are confronted everywhere by foreigners. It remains to be seen whether the bonds of race and of language are sufficiently strong to overcome the disruptive forces of internal political jealousies and religious animosities. Another serious difficulty which the statesmen of Jugo-Slavia must face is their own inexperience in practical statecraft and the inexperience of their people in self-government (see page 486).

Photograph by D. W. Iddings, © Keystone View Company

IN JUGO-SLAVIA—THE HUSREF BEG MOSQUE AND BAZAAR, SERAJEVO, BOSNIA

Except the Montenegrins and the Serbians in the larger part of royal Serbia, all the groups which are to compose the nation of Jugo-Slavia have been under the blighting domination of alternating foreign masters since the Middle Ages (see page 485).

the empire of the Ottoman Turks now embraces hardly more than Asia Minor.

No accurate figures exist, but under the scepter of the Sultan are not more than 20,000,000 people, among whom about three-fifths may be reckoned as Ottoman Turks. Very small, however, is the proportion of original Ottomans, members of the Turkish group of the Ural-Altaian family.

The harem, constantly replenished by women from every nation, and the continuous accession of Christian and Jewish apostates have changed their blood and transformed their Tatar type. The majority of Grand Vizirs and Capoudan Pashas or heads of the navy during their first five hundred years were of Christian or Jewish ancestry.

The few unmodified Ottomans are, whether pasha or peasant, of stately and dignified presence, conservative, contemptuous of everything foreign. The "young Turks" affect European customs and simulate European ideas, but manifest few of the virtues of the West. The Turk in general is merciless in victory and in

A GROUP OF JUGO-SLAVS IN NATIVE COSTUME

These people of the eastern shores of the Adriatic, who formerly were subjects of Austria-Hungary (see page 485), are strongly attached by sympathy and common interests to their blood brothers of the Kingdom of Serbia. They have the same love for romance, poetry, and music, the same pride of race, and many of the same customs and superstitions.

the exercise of power, but abject and harmless in defeat. There is no more cruel master; there is none more submissive when subdued.

The Ottoman administration, always consuming, never producing, but repressive of production, has blasted every people it controlled. Even the Turks themselves, impoverished and oppressed, diminish in numbers. The government, based solely on force, has always ruthlessly employed any means to prolong its existence. It has shrunk from no enormity of massacre or extermination. Hundreds of years ago it adopted the color of blood for its flag, and a formal title of the Sultan is "Hounkiar," or the Slayer of Men.

THE ALBANIANS *

The Albanians occupy a territory east of the Adriatic, roughly corresponding to ancient Epirus and southern Illyricum. Their origin and language present many difficulties. Professor Ripley believes they are "indigenous to their country." Dr. Deniker calls them "a separate Adriatic or Dinaric race." It is reasonable to regard them as the most ancient people of southeastern Europe, descendants of the Pelasgi.

Their language is supposed to be the sole survivor of the primitive Thraco-Illyrian group. Its vocabulary is encumbered with many Greek, Latin, Italian, Slavic, and Turkish words, but the grammar is its own.

The Albanians show remarkable racial tenacity. Albanian communities in Italy and Sicily, dating from the fifteenth century and having a population of over 200,000, have fused little with the Italians, and in marked degree retain their own language and customs. So to less extent do 200,000 Albanians domesticated in Greece.

Disdain of foreigners and pride of ancestry, though ignorant of what that ancestry is, keep them apart. This pride and their mountain life have fostered a passionate love of independence. Grote describes them as "poor, rapacious, fierce, and formidable in battle," but they have many virtues, are faithful, generous, and hospitable. Nowhere is a woman safer than in their wild mountains.

Known by foreigners as Albanians, people of the snow-land, they call themselves skipetari, or mountaineers. At home and abroad they number about 1,500,000. Of their numerous tribes, the Catholic Mirdites, who allow no Moslem in their vicinity, are the most important and powerful.

The river Shkumbi, along which may still be traced the Roman Egnatian Way, separates the Christian Albanians into two groups, northward, the Roman Catholic Ghegs; southward, the Greek Orthodox Toscs. The former use the Latin alphabet, the latter the Greek alphabet. They have no accepted alphabet of their own, though many attempts, some of them curious, have been made to supply the lack. At least half the Albanians are Moslems, result of conquest, who will gradually return to their former Christian faith or emigrate.

George Castriota, or Scanderbeg, who defeated the Turks continuously through twenty years, is their national hero. Marco Bozzaris, of whom Fitz-Greene Halleck wrote, "At midnight in his guarded tent," was also an Albanian. So was Mahomet Ali Pasha, the foremost Moslem figure of the nineteenth century.

European statecraft never showed itself more humorous than when, in 1913, it designated the timorous Prince of Weid to be king of the Albanians.

THE GREEKS *

A map of Greek settlements, as they existed in the sixth century before the Christian era, would serve as a map of the lands they inhabit today. Their colonists in southern France and southern Italy have merged in the modern Frenchman and Italian. Otherwise, the Greece of five hundred years before Christ and the Greece of nineteen hundred and eighteen years after Christ coincide.

Torrents of invasion have flooded Greece—Goths, Venetians, Lombards, French, Germans, Ottomans, Albanians, Vlachs, many of whom have permanently remained. Constantine Porphyrogenitus wrote, in the tenth century, "All Greece has become Slav." Henri de Valenciennes, in the thirteenth century, thought Greece had become French. Fallmerayer, in the nineteenth century, demonstrated that the Greeks have "hardly a drop of true Greek blood in their veins."

A subject people since their conquest by the Romans, through three centuries serfs of western Europe, the next three centuries slaves to Turks, the Greeks have known freedom only since those seven years of horror which we call the Greek Revolution (1821-8).

Yet their civilization was able to permeate the Eastern Roman Empire, so that after the seventh century the latter is called the Greek or Byzantine. Until early in the nineteenth century all Turkish Christian subjects in the peninsula were considered Greeks. Their imperishable language, daily heard in the ritual of their Church, was and is spoken, in however debased and corrupt a form, by Greeks everywhere.

Yet despite decimation and an almost unlimited intermingling of foreign elements, the Greek remains the same in physical features, manner of life and occupation, and personal characteristics and tastes. His face is still

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Albanians," by Theron J. Damon (November, 1912); "Recent Observations in Albania," by Brig. Gen. George P. Scriven (August, 1918).

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Greece and Montenegro" (March, 1913), and "Greece of Today," by U. S. Senator George Higgins Moses (October, 1915), and "Saloniki," by H. G. Dwight (September, 1916).

Photographs by Pauline H. Dederer

CANALESE WOMAN IN RAGUSA, DALMATIA

The women from the valley of Canali may be distinguished by their snowy-white starched caps and dark woolen gowns. The bright-hued market bags which they carry add a gay note to their otherwise somber costume. The people of Ragusa live in the shadow of a glorious past, when their city was an independent republic and its overseas commerce

HERZEGOVINIANS SEEN IN RAGUSA, DALMATIA

These women are the most picturesque of all the types seen in Ragusa. They wear woolen tunics of white or dark blue over coarse white garments, and heavy woolen aprons of many bright hues, like small Oriental rugs. Their fascinating head-dresses are white lace veils hanging from tiny red caps fastened with gold pins and surmounted on fête days with

oval, his complexion olive, his hair abundant and black, his eyes luminous and dark, his figure slight and supple. Only seldom does one meet a light-complexioned, light haired Greek.

He is still at home upon the sea. The carrying trade of the eastern Mediterranean and the Black Sea is largely in his hands. In 1916, of 2,658 steamers entering the Piræus, the harbor of Athens, 2,494 were under the Greek flag. His little sailing vessels, averaging 250 tons capacity, are numerous throughout the Levant.

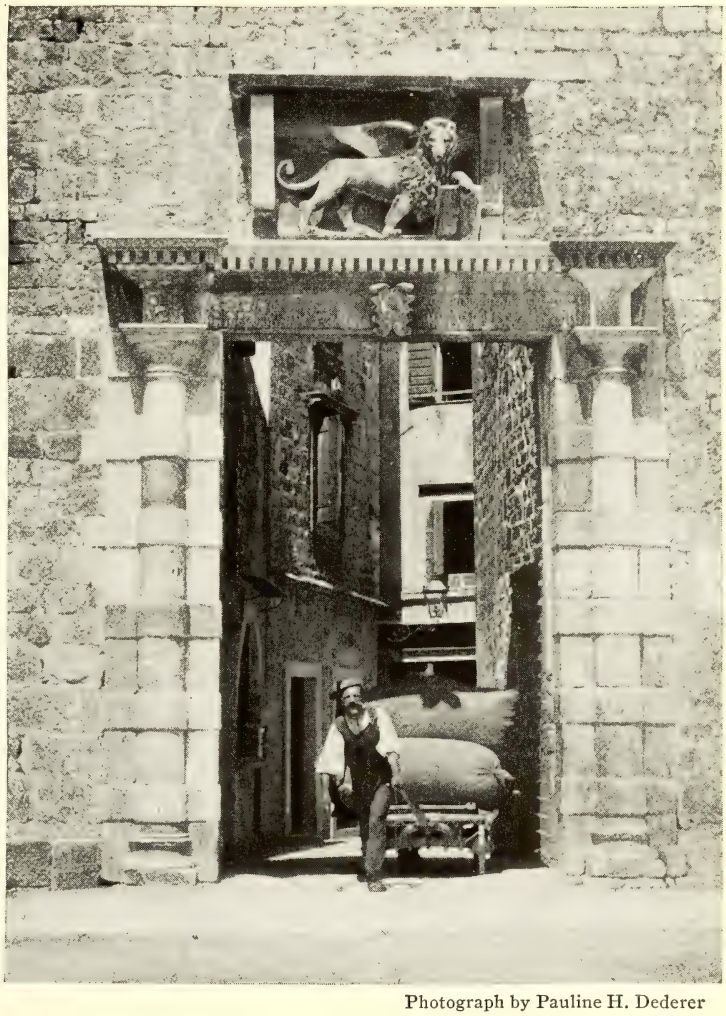
He is an enterprising and ambitious tradesman, frugal and industrious. Many of the great banking houses of southern Europe are Greek.

As with the ancients, so with the moderns, a chief diversion or occupation is politics. Yet modern Greece has not produced a single great statesman except Venizelos, himself a Cretan.

The people are not responsible for the shortcomings and mistakes of their government in this just-ended war. They live under a monarchical system, thrust upon them by the Great Powers, after their successful Revolution of 1821-8, and contrary to their instincts and desires. Hence they missed an opportunity in the world struggle to strike a blow for freedom and humanity as well as for themselves—an opportunity such as may never come to them again. Their king, a German sympathizer, since dethroned, was able to block the national will and disappoint all its aspirations.

In consequence of the Balkan wars of 1912 and 1913 there were added to the kingdom about 1,400,000 Greeks formerly Turkish subjects. A little later Crete was united to Greece. The present population is about 5,000,000.

The excess of males at birth over females is greater among the Greeks than among any other people of Europe.



Photograph by Pauline H. Dederer

A DALMATIAN PEASANT PASSING THROUGH THE PORTA PLOCE, RAGUSA

Until 1808, Ragusa, proudest of Dalmatian towns, maintained its nominal independence, but at various times during the Middle Ages it came under the protection of Venice, of Hungary, and of Turkey. The Winged Lion of St. Mark above the gateway testifies to the sway of Venice centuries ago. At the beginning of the nineteenth century Napoleon annexed Ragusa to his newly established "Kingdom of Illyria." From 1814 up to the present time the city has been an Austrian possession.

THE BULGARIANS *

The Bulgarians are of Finno-Ugrian origin. They derive their name from the river Volga,

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Bulgaria, the Peasant State" (November, 1908); "The Rise of Bulgaria," by James D. Bouchier (November, 1912); "Bulgaria and Its Women," by Hester Donaldson Jenkins (April, 1915).

Photograph by Erdelyi

CROATIAN MEN IN NATIVE COSTUME: THE SKIRTS ARE IN REALITY VERY BAGGY TROUSERS (SEE NEXT PAGE)

The Serbs and Croats belong to the same branch of the Slav race. The chief difference between them is religious and, to a less extent, linguistic. Their literary language is the same, save that the Croats employ the Latin alphabet, while the Serbs use a modified form of the Cyrillic or Russian (see Jugo-Slavia, page 485).

on which the early kingdom of Greater Bulgaria arose in the fifth century. From the Volga their Khan led some of their wild horsemen in 679. They crossed the Danube and subdued the Slavs on its south bank. Few in number, they gradually merged with the Slavic inhabitants. When Christianized in the ninth century by the Greek missionaries, Saint Cyril and Saint Methodius, the fusion became complete.

The name Bulgarian remained, but in language, institutions, and customs the entire people was Slavic. The Bulgarians are rightly reckoned a Slavic people.

They subjugated all the northern part of the peninsula from the Black Sea to the Adriatic. Later their kingdom broke into two parts, both to be overthrown by the Byzantine emperors. Successful rebellion enabled them to found a second more powerful empire, over which their greatest Tsar, Asen II, reigned wisely and well.

Then came decline. The Bulgarians paid tribute to the Serbian king, Dushan. The Ottoman Turks forced the last Bulgarian king to become a vassal of the Sultan and to yield his sister to the harem. There followed five centuries of indescribable Turkish domination. Many Bulgarians became Moslems, they and

Photograph by Erdelyi

CROATIAN MAN AND WIFE: COSTLY THEIR HABITS AS THEIR PURSE CAN BUY, AND OFT EXPRESSED IN FANCY, RICH AND GAUDY

Before the war, market day in Agram, the capital of Croatia and Slavonia, was a picturesque occasion, with the peasants resplendent in their gaily colored embroideries on white garments, their bright shoes and mantles. The life of many of these peasants is extremely hard, and in some families the women are said to wear no clothing above their waists while indoors.

their descendants to be known as Pomaks. Many fled the country. By the Russo-Turkish War of 1877-78, Russia freed Bulgaria.

The emancipated State, called the Principality of Bulgaria, included only the region north of the Balkans. To it was added, by popular revolution, seven years later, the province of Eastern Roumelia, south of the Balkans. Bulgaria, though free, was made by the Great Powers tributary to the Sultan as a vassal State. In 1908 it declared itself independent, and the prince proclaimed himself "Tsar of all the Bulgarians."

Many Bulgarians, Greeks, and Serbians still remained under the Turkish yoke. To free their fellow countrymen and coreligionists, allied Bulgaria, Greece, Montenegro, and Serbia made successful war against the Turks in 1912. For the first time the four Balkan Christian States acted together.

THE CROATIAN PEASANTS ARE ESPECIALLY FOND OF OUTWARD SHOW

Wedding processions, such as that shown in this photograph, afford opportunity for the display of all the finery of the countryside. The native costume is distinguished by a wealth of stitchery. The influence of the East is indicated in the white garments loosely fashioned. Physically, the Croatian is a tall, strong, clean-looking individual, with steel-blue eyes and straight, fair hair (see page 486).

Photographs by Erdelyi

A CROATIAN WEDDING PROCESSION, ACCOMPANIED BY A PERIPATETIC STRINGED ORCHESTRA

In twenty years, from 1880 to 1900, the Croats increased in number by 33 per cent, due to a low death rate and a very high marriage and birth rate. Like all South Slavic peoples, there is a large preponderance of male over female children in Croatian families.

That union did not long continue. Each put forth extravagant claims regarding the nationality of the people they had freed. In Macedonia, where a pell-mell of races spreads round Monastir, their claims were most violent. Turkish rule had deadened national sense among the newly liberated. Many did not know whether they were Bulgarians, Greeks, or Serbians.

In 1913 Bulgaria, without warning, suddenly attacked her allies, Greece and Serbia, and was decisively beaten. In 1915, utterly indifferent to the world-issues involved, she joined the Teutonic Powers, believing that their success was assured and that thereby she would advance her interests. In 1918, sensing their impending defeat, she abandoned her allies in the field and made peace.

In the lamentable events of the last six years it is just to discriminate between the Bulgarians and the unscrupulous German Prince who was their Tsar. The docile people submitted and followed but they did not initiate or perhaps desire the tortuous, inglorious policy of their sovereign.

In 1917 the Bulgarians constituted three-fourths of the 5,518,000 inhabitants of the country, practically all communicants of the Eastern Orthodox Church. The more than 700,000 Turks or Pomaks were rapidly being absorbed.

Bulgarian is called "at once the most ancient and most modern" of Slavic languages. The grammar shows modern tendencies, but the linguistic groundwork is in close affinity with the oldest written Slavic dialect, that of the Church.

The Bulgarian birth-rate in 1910 was forty-one to every one thousand persons. In 1911 the excess of births over deaths was 18.35 per 1,000 persons—a larger excess than among any other people of Europe.

The Bulgarians are a sturdy, sober, industrious, practical people. While not vivacious or emotional, their parental and filial affection is marked. Materialistic rather than idealistic, they nevertheless appreciate education for their daughters as well as for their sons.

THE SERBIANS *

The Serbians first appear as a confederation of Slavic tribes, which, together with their near kin, the Croats, inhabited the northern slope of the Carpathians. In the seventh century the two occupied side by side all the west and northwest of the peninsula. Both recognized the Byzantine Emperor as suzerain.

The Serbians spread far and wide over present Serbia, northern Albania, Montenegro, Bosnia, Herzegovina, and possibly farther north. The Croats settled to the northwest.

Christianized before any other Slavic tribe, geography brought the Serbians who lived eastward into the Eastern Orthodox Church and carried the Croats living westward into the Roman Church. Internal dissensions retarded their growth. Vassals alternately of Bulgarians and Byzantines, they did not attain independence until the twelfth century.

Though the Serbian kingdom lasted little more than three hundred years, two of its Tsars render it illustrious, Stephen Dushan the Great and Laza.

Ably seconded by his Bulgarian wife, the Tsaritza Helen, Dushan united nearly all the peninsula in the effort to crush the menacing Turkish power but died suddenly on his march to Constantinople. In lofty aim and ability as legislator, diplomat and warrior, this dimly-seen eastern Tsar is one of the grandest figures of the Middle Ages.

Lazar took up the task of Dushan but fell, betrayed and gloriously fighting, in 1389 at the battle of Kossova on the Plains of Amsel. Serbia prostrate, but with spirit unbroken, resisted for seventy years, but was made a pashalik of the Sultan soon after the fall of Constantinople.

The heiduks, guerrilla Robin Hoods of the peninsula, in the mountains and forests carried on the fight against the Turks. In 1804, led by the swineherd Kara George, the Serbian people rose en masse. After twenty-five bloody years, in the Russo-Turkish treaty of Adrianople the Sultan recognized their autonomy. A new leader, Milosch Obrenovitch, had arisen.

The savage rivalry of the Karageorgevitch and Obrenovitch families, though unattended by civil war, reddens the story of Serbia. Three of the former and five of the latter have reigned. The Obrenovitches became extinct in 1903.

The Russo-Turkish war of 1877-78 resulted in the full independence of Serbia which proclaimed herself a kingdom four years later. Enraged at the union of Bulgaria and Eastern Roumelia, Serbia in 1885 declared war but was decisively beaten at Slivnitza. More worthy was the Balkan war of 1912 when Serbia, together with Bulgaria, Greece, and Montenegro, freed the Christian subjects of the Ottomans. In the Balkan war of the following year she was victorious over Bulgarian attack.

The story of the Austrian ultimatum, of three invasions of Serbian territory by the Austrians, each time repulsed, and of her desperate resistance against the combined Austrian, Bulgarian, and German armies, forms an essential chapter of the just-ended war.

The kingdom is inhabited by 4,616,000 people, almost exclusively Serbian. It is the Piedmont of the newly formed Jugo-Slav confederacy. The number of Serbians resident in former Austria-Hungary may be reckoned as 5,000,000, in great part descendants of the expatriated after Kossova. Professor Pupin, educator and inventor, is a Serbian.

Without harshness, the Serbian language is an almost perfect instrument for poetry and

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Serbia and Montenegro" (November, 1908), and "The Kingdom of Serbia," by William Joseph Showalter (April, 1915).

HARVEST TIME IN CROATIA

The ample skirt-like white trousers of the harvesters are to be found in many parts of Hungary, particularly in the region occupied by the Croats. Note how the wide-spreading horns of these magnificent white oxen overlap. In recent years the Croats and Slovenes have been emigrating to America more rapidly than any other European race, with two exceptions—the Hebrew and the Slovak.

music. The Czech Schaffarik says: "Serbian song resembles the tune of the violin; old Slavonian, that of the organ; Polish, that of the guitar. Old Slavonian sounds like the loud rush of the mountain stream; Polish, like the sparkling and bubbling of a fountain; Serbian, like the quiet murmuring of a streamlet in the valley."

Few very rich, none very poor, a pauper unknown before 1914, each family owning its own homestead, however small, democratic in the extreme, loving former Queen Natalie because "she walks the streets bareheaded with flowing hair," vivacious and quick in movement, unsuspicious and open-handed, equal to the Belgians in suffering, heroism, and glory. Out of the furnace the Serbians are emerging, a trustworthy, steadfast, self-reliant people (see also Jugo-Slavia, page 485).

THE MONTENEGRINS *

According to the Slavic legend, the Almighty, when shaping the earth, carried a great bag filled with mountains which he was sowing as a farmer sows grain. East of the Adriatic the bag broke, the mountains fell out, took root and produced the craggy masses of the Tserna Gora, or Black Mountain, or Monte Negro.

The Montenegrins as a people are the incarnation of heroism and freedom. After their kingdom was destroyed at Kossova, a handful of Serbians, who would neither emigrate nor submit, took refuge in these mountains. Shut off from outside help, entirely surrounded by Ottoman Turks, many times attacked by apparently resistless armies which they always defeated, scorning even nominal allegiance to the Turk or any other power, from 1389 to 1916 they maintained their savage independence.

Resistance to the Turk was the dominant motive of their social and political life. Their ruler was a vladika or bishop because, as sacrosanct, he would be invulnerable to Moslem attacks or bribes. Succession, which had been from uncle to nephew, became hereditary in 1851.

The Sultan formally recognized their independence in 1799. So did all Europe seventy-nine years later.

This tiny State, after standing for centuries as the only beacon light of

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Where East Meets West" (Dalmatia, Montenegro, and Herzegovina), by Marion Cruger Coffin (May, 1908); "East of the Adriatic" (Dalmatia, Montenegro, Bosnia, and Herzegovina), by Kenneth McKenzie (December, 1912).

HUNGARIAN PEASANTS IN SUNDAY DRESS KNEELING AS A RELIGIOUS PROCESSION PASSES

The geographical location of a town in Hungary or Austria in which a person lives less frequently affords a probable index to his racial status than in any other country in the world. There has never been any such being linguistically or racially as an Austro-Hungarian in the sense that there are Frenchmen, or Englishmen, or Spaniards. The empire of the Hapsburgs was a confused conglomeration of peoples of divergent religious and political faiths and of antagonistic blood ties.

freedom in the Balkan Peninsula, was overwhelmed for a time by the Teutonic Powers in 1916.

There are about 400,000 Montenegrins. They are of tall, large, and erect figure. Their characteristics are those of liberty-loving mountaineers who have lived apart and distrust strangers. Their women are brave, loyal, and implacable as themselves. "The word of a Montenegrin was never broken." Elena, daughter of King Nicholas I, is wife to Victor Emmanuel II and Queen of Italy (see also Jugo-Slavia).

JUGO-SLAVIA

To unite all the Jugo-Slavs has long been the aspiration of leaders among the Croats and Slavonians as well as those in the Kingdom of Serbia. They wished to include the Bosnians, Helvats, Croats, Slavonians, Dalmatians, and Slovenes, former Austro-Hungarian, or still earlier Turkish, subjects, as well as the independent South Slavic States of Montenegro (see page 484), Serbia (see page 483), and Bulgaria (see page 479).

The world war has extended this desire, except that it no longer includes Bulgaria. When Bulgaria allied herself with the Turks, who through centuries had trampled upon the Slavs, and sent her armies to work their savage will upon the Serbians, she outraged Slavic feeling more than her mere alignment with their common foe, the Central Powers, could have done.

One obstacle to federal union is difference of church communion. Most of the Jugo-Slavs are Eastern Orthodox, the remainder, except those who are Moslems, Roman Catholic. Obligations to Islam rest lightly on the peninsular Moslems and they will eventually join one or the other church.

The Roman Church has allowed the Dalmatian, Slavonian, and Croatian Catholics, almost interruptedly since their conversion, to use the Slavic instead of the Latin liturgy, and to employ their Glagolithic, or Cyrillic Slavic, alphabet. Against this custom there has been, mostly during the last generation, foreign protest, based on political grounds. An attempt, how-

ever, to enforce the Latin ritual would probably swing the dissident Jugo-Slavs into the Eastern Orthodox Church.

Another obstacle to federal union is inexperience in self-government on the part of the several groups. Except the Montenegrins, and the Serbians in the larger part of royal Serbia, all the groups have been under the blighting domination of alternating foreign masters, mainly Turks, Austrians, and Magyars, since the Middle Ages. The federal system is of all systems the most difficult and complex, requiring the largest degree not only of skill, but of self-adjustment and self-control. Yet upon such a Ship of State these Slavic landsmen would embark as officers and crew in a stormy sea.

To the majority of these people the idea of union is novel, until recently entertained only by some score of dreamers, who, while Turkish or Austro-Hungarian subjects themselves, hardly believed in its possibility of realization. Nor do all the groups equally desire union, even now. The Slovenes, for example, are not over-enthusiastic for it. In some respects the situation is analogous to that of the thirteen American States after the Revolution and before the adoption of the Constitution.

Powerful factors exist favorable to coöperation. The peoples are racially one, confronted everywhere by foreigners. Despite minor local differences, they possess in the Serbian a language intelligible to all, though in less degree to the Slovene, spoken by the great majority, the literary language of Croat, Bosnian, Helvat, Slavonian, Serbian, and in part of the Dalmatian. Bonds of race and language are strong.

There is practical absence of inherited animosities. The fact is recognized that whoever of them fought in the Austro-Hungarian ranks did so under military compulsion. There is also appreciative recognition of decimated Serbia's natural leadership.

The one compelling factor is the consciousness that unless united the political existence of any of them is most insecure.

In the attempt of the Jugo-Slavs to rule themselves in the only possible way, they are entitled to the sympathy and patience of all who believe in self-government by the people.

THE BOSNIANS

For the boundaries of the provinces on the east shore of the Adriatic political gerrymander is responsible, begun before America was discovered. The inhabitants, subjects until recently of Austria-Hungary, are Bosnians, Helvats, Croats, Dalmatians, Slavonians, and Slovenes—a perplexing medley of Slavic peoples, among whom are found a few Jews and foreigners.

The Bosnians, so named from the river Bosna, are Serbians and Croats, who for a time maintained a small and not powerful kingdom under a ruler called Ban. They are strongly drawn by sympathy and interest to their kinsmen in royal Serbia. At their capital, Serajevo, occurred on June 28, 1914, the assassination of the Austrian Crown Prince and his wife, the Duchess of Hohenberg, which preluded the European war.

THE HELVATS

The Helvats, or Herzegovinians, who are Serbians and Croats, are appropriately named, their district having been lopped off from Bosnia for the advantage of a Herzog or Archduke.

THE CROATS *

The Croats were long intimately connected with the Serbians, whom they greatly resemble. In 1908 the Austro-Hungarian sovereign appropriated the Turkish provinces of Bosnia and Herzegovina, ninety-eight per cent of whose two million inhabitants are Serbians or Croats. There is no such unanimity in their religion. Forty-two per cent are Eastern Orthodox, calling themselves Serbians; twenty-eight per cent Roman Catholics, calling themselves Helvats, and twenty per cent Moslems, calling themselves Turks.

THE DALMATIANS †

The Dalmatians occupy a long, narrow, mountainous fringe of coast land and islands east of the Adriatic. They were often called Pagani or Pagans in derision as being the last of the Slavs to embrace Christianity. Immigrating in great numbers they quickly absorbed the native population and retained their own characteristics. Just as the Slavs gave the name of Vlachs to the Latin-speaking Rumanians, so the Slavic invaders of Dalmatia called the Latinized people they found there Vlachs, or Mavro-Vlachs — Black Vlachs. In the whirligig of language, Morlach, a corruption of Mavro-Vlach, has become the term by which Dalmatian Slavs are commonly known in English.

The dalmatic, or ceremonial outer robe, worn by the Roman Catholic clergy at the divine office and by sovereigns at coronations, was introduced into Rome in the second century from Dalmatia, where it was used only by the nobility.

Dalmatia, a shuttlecock between Venice and Hungary, never experienced a national existence. During the last two centuries it has been the alternate possession of Venice, France and Austria. It furnished many of the best sailors in the Austrian navy.

THE SLOVENES OR WENDS

The Slovenes or Wends are found outside the Balkan Peninsula in the former Austrian Provinces of Carinthia, Carniola and Styria.

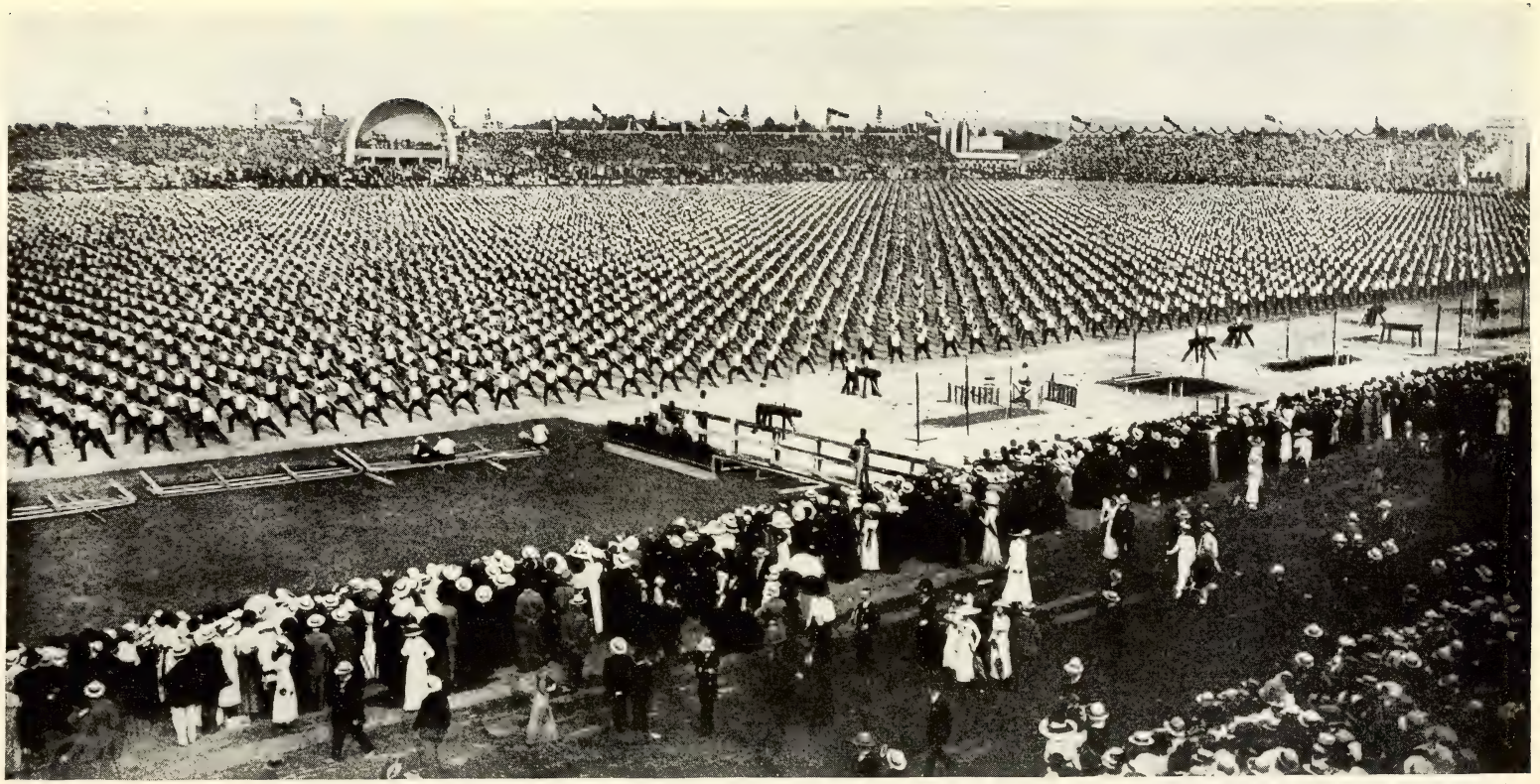
* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "In Quaint, Curious Croatia," by Felix J. Koch (December, 1908).

† See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Where East Meets West," by Marian Cruger Coffin (May, 1908), and "East of the Adriatic," by Kenneth McKenzie (December, 1912).

Photograph from Underwood & Underwood

THE OLD CAPITAL OF A NEW NATION: PRAGUE, CZECHO-SLAVIA

The Royal Castle and St. Vitus Cathedral. The palace was begun in 1344, and the first stone was laid by Charles IV. It has 711 apartments and three grand halls. It was the home of Bohemia's own rulers from medieval times until 1620, when the kingdom was crushed by allied armies in the battle of Bila Hora (White Hill), a plateau on the outskirts of the city. Since that battle the Czechs in Bohemia have sought continually to regain their freedom. In the open and in secret they have never ceased to agitate their cause. It was in the city of Prague that, sixty years ago, the Sokol, or Gymnastic Association, was started, with the secret purpose of some day throwing off the Austrian yoke (see illustration, page 488).



Photograph from Underwood & Underwood

THE SOKOL IN PRAGUE: A GYMNASTIC ASSOCIATION WHICH HELPED TO CREATE A NATION

These men, eleven thousand in number, were giving a calesthenics exhibition ostensibly; in reality they were training to fight Austria when the opportunity should come. The Sokol, or Gymnastic Association, was organized sixty years ago to prepare secretly for a revolution. Its members were really interested in athletics, but their main purpose was to maintain an organization of men who could fight. At the beginning of the great war, Austria put the Czecho-Slovaks into the army with the greatest possible speed and sent them to the front-line trenches, so that they would be the first to be slain. And about 50 per cent of them were killed. Every revolutionary Czech or Slovak in the Austrian army was a real enemy of Austria—an enemy at heart—and tens of thousands of them surrendered and went over to the Italians and Russians, as well as to the Allies in the Balkans, and took up arms against Austria. Many regiments of Czechs and Slovaks were organized in the Entente countries and in the United States to fight Germany and Austria. The Sokol, calling itself an athletic association, was in reality a revolutionary military organization, with a membership of over 300,000 men, at the beginning of the war. It accomplished its purpose. It was one of the main causes of Austria's downfall, which in turn led to the downfall of Germany.

In habits and purpose they are in sharp contrast to the Croats and Slavonians, their near kin. Constantly intermarrying with Germans, Hungarians and Italians, they have seemed until very recently little affected by racial concerns. They are industrious, pliant, little inclined to resist or complain. Perhaps in consequence the Austrians treated them with a moderation shown to no other subject Slavs. They number about 1,350,000, are Roman Catholics and use the Latin alphabet.

THE SLAVONIANS

The Slavonians, people who have appropriated the ethnic name of their race, are neighbors of the Croats on the north. In 1840 the Hungarians imposed the Magyar on both as the official language, whereupon the smouldering hatred for all things Hungarian burst into flame. Everywhere insurrection broke out.

After 1868 the Croatian-Slavonians enjoyed the empty honor of being entitled the Kingdom of Croatia-Slavonia. Controlled directly by Hungary, their Ban or King was appointed by the Hungarian Premier and was subject to instant dismissal by him. The National Assembly was limited to strictly local affairs, but its every enactment required the approval of the Hungarian minister for Croatia-Slavonia who was himself a member of the Hungarian cabinet. This device of "The Kingdom of Croatia-Slavonia" was most dexterous for soothing the pride and dictating the action of a subject people. Temporarily successful, in the end it enraged the inhabitants, as they realized how plausibly they had been duped.

CZECHO-SLOVAKIA *

The Austro-Hungarian Monarchy was an anomaly, both as to its system and as to the ethnical composition of its inhabitants. A reference to its method will throw some light upon present and future conditions.

Austria-Hungary consisted of two equal and independent parts, Austria and Hungary. In Austria in 1910 there were 9,950,000 Austrian Germans as against 18,243,000 non-Germans of various races, mainly Slav. In Hungary in 1910 there were 10,051,000 Magyars as against 10,836,000 non-Magyars of various races.

The Germans, though but one-third the population in the one, were dominant there and the Magyars (see page 497), though less than half the population in the other, were dominant there. To maintain this ascendancy of these two minorities summed up all the internal policy and determined most of the foreign policy of Austria-Hungary.

The Austrian-Germans and the Magyars always disliked each other. The Austrian was a foreigner at Buda-Pest and the Magyar at Vienna. But each recognized that his own political salvation depended largely on alliance with the other. To the Austrian especially it was an absolute necessity. The ascendancy of each was to be ascribed in part to long monopoly of power and to superior cleverness in manipulation.

But always it could count on jealousies and divisions among the Slavic subjects, a condition always encouraged. More than once the hopes of some one of its subject Slavic peoples have approached realization, only to be thwarted by the opposition of other Slavs or by its own dissensions.

The disruption of the Austro-Hungarian Empire left the Magyars in much the same position as before, but broke Austria into fragments. The Austrian Germans still formed a compact body, but each of the subject Slavic peoples sprang to a realization of the national idea.

The Germans inhabit a large territory, extending from Switzerland south of Bavaria to a little east of Vienna; also a belt of German population almost surrounds the Czechs, and German enclaves are dotted like islands in the midst of neighboring Magyars and Slavs.

Despite frequent usage, it must not be forgotten that the word Austrian never was identified with or represented a nation. It is a convenient distinguishing term, as in saying that the Austrian Germans have strong sympathies with the Germans in the former German Empire and will ultimately unite with them.

The former South Slav, or Jugo-Slav, subjects of Austria-Hungary, the Bosnians, Helvats, Croats, Slavonians, Dalmatians, and Slovenes, were described among the races of Jugo-Slavia, where they are placed by geography. The other Slavic peoples, former subjects of Austria, are the Czechs, Moravians, Slovaks, and Ruthenians.

The Czechs, together with the Slovaks and Moravians, are now recognized by the United States and the Entente Allies as forming the independent Czecho-Slovak nation. On the map one remarks the broad area, inhabitated by Germans and Magyars, which separates the Czecho-Slovaks from the Jugo-Slavs.

THE CZECHS *

The Czechs or Bohemians are the farthest west, surrounded except on the east by a German population. Bohemia, Czech in Slavic, derives its name from the Boii, a Celtic people who once occupied the country and who were succeeded by various German tribes. Long afterward the Czechs took possession, probably during the great Slavic invasion of the sixth century.

The Czech nobles or land-proprietors soon adopted German ways and spoke only German. Christianized by Saint Methodius, the middle

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Land of Contrast" (Austria-Hungary), by D. W. and A. S. Iddings (December, 1912), and "Hungary, a Land of Shepherd Kings," by C. Townley Fullam (October, 1914).

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Bohemia and the Czechs," by Ales Hrdlicka (February, 1917).

Photograph by M. O. Williams

CZECHO-SLOVAKS IN SIBERIA: MEMBERS OF A DEMOCRATIC ARMY WHICH HELPED TO THWART GERMANY IN HER EFFORT TO ORGANIZE RUSSIA AS A FIGHTING FORCE AGAINST THE ALLIES

The Czecho-Slovaks, 40,000 in number, now garrison practically every town along the Trans-Siberian Railway from the Urals to Harbin. When they reached Siberia from the Russo-Austrian front they had practically no arms. The Bolsheviki were well armed and in some instances commanded by German officers, but the dauntless Czecho-Slovak soldiers attacked the enemies of order and freedom with bare hands and rocks, seized the machine-guns and rifles, and thus equipped themselves with the weapons of their foes. Such is the caliber of the men who are to defend the new nation of Czecho-Slovakia in the heart of Europe. Their achievements in Siberia form one of the most dramatic chapters in history.

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CZECHO-SLOVAKS IN AMERICA: MEN AND WOMEN IN NATIVE COSTUME AT A BENEFIT GIVEN AT THE CZECHO-SLOVAK MILITARY MOBILIZATION CAMP, STAMFORD, CONNECTICUT

Thousands of natives of Bohemia, Moravia, and Slovakia, who had come to America to live in peace, pledged their lives, their fortunes, and their honor to aid the Allies in overthrowing the oppressive autocracy of the Hapsburgs and the Hohenzollerns which had crushed the freedom-loving people of Europe for centuries. Since the proclamation of the new nation, all the young ladies of Prague have taken to the fashion of peasant costumes, and several members of Parliament wore the old national dress when they assembled to hear President Masaryk take his oath of office.

classes became communicants of the Eastern Orthodox Church, the ritual of which in each country of its faith was always celebrated in the vernacular of the people. When afterward they changed to Roman Catholics, Latin in church services superseded the Cyrillic alphabet and the old Slavic ritual.

The Czech language, thus excluded from the Church by Latin and from society by German, became the peculiar heritage of the common people. As long as Bohemia was an independent State, neither persuasion nor persecution could force them to give it up.

After Bohemia became an Austrian province, all obtainable Czech books and manuscripts were burned and the use of Czech in writing or in schools was prohibited under heavy penalties. But the Czech persisted in his passionate devotion to his mother tongue. Language and nation became synonymous, both denoted by the same word, *jazyk*. The language kept the nation alive and saved it from absorption. Meanwhile it produced such wealth of early poetry as is found among no other Slavs.

The political existence of the Czechs resembled in striking degree that of their racial kindred, the Poles. In both there was found a strong, sound, patriotic common people. In both there was the same vacillating royalty, eventually elective, and above people and king a turbulent, over-rich nobility, the patriotism of which seemed usually subordinate to class or personal interest. But the humbler Czechs were of more independent spirit, less easily cowed, and sometimes able to force the nobles to follow instead of lead.

Czech romance finds expression in its grandest figure, John Huss; in the blind, unconquerable leader of Zizka; in the stirring, futile heroisms of the Hussite wars; in Comenius, one of the foremost educators of history, author of "The Visible World," the first illustrated book for children, and even in its militant University of Prague, the most venerable school of learning in Central Europe.

The evil genius of the Czechs was long the House of Hapsburg. Though afterward nominally existent, their kingdom was submerged at the battle of White Mountain in 1620, only its name surviving among the titles of the Austrian Emperor.

The royal history of Bohemia twice touches England in an interesting way. From the Bohemian King, Ferdinand, who lost his throne at White Mountain, was descended George I, the first English sovereign of the House of Hanover. The crest of the Prince of Wales with its three feathers and motto, "Ich Dien," was formerly borne by the Bohemian kings. After the great victory of Crecy in 1346, it was picked up by Edward the Black Prince near the body of the blind Bohemian king John, who had fallen in the battle, and has ever since been the crest of the heir to the English crown.

In the former kingdom of Bohemia there are about 7,000,000 inhabitants, nearly four-fifths of whom are Czechs, and the remainder mostly Germans. Many other Czechs live in Austrian and Prussian Silesia, among the Moravians and Slovaks, and in the United States.

The recent exploits of the Czecho-Slovaks in Siberia, Russia, France, and Italy won the admiration of the world and were no small factor in gaining from the Entente Allies the recognition of Czecho-Slovakia as an independent State.

THE MORAVIANS

The Moravians, centered on the Morava, occupy a plateau of the size of Massachusetts, south of the Czechs and Slovaks, whom they much resemble. They were Christianized by Saint Methodius. In the ninth century their kingdom, which reached the Oder and the Drave, was overwhelmed by the Magyars.

Disciples of John Huss founded the Moravian Brethren, long a religious force in Bohemia and Poland. Almost destroyed in the Thirty Years War, the few survivors took refuge in Saxony. Persecuted there, many emigrated to Georgia, in America. John Wesley came in contact with them, and their exemplary, persuasive influence resulted in his conversion and that of his brother Charles. They were the first to insist on the conversion of the heathen as the duty of the Church. Since then they have been foremost in missionary labors. In Moravia the Brethren have almost disappeared. All but four per cent of the 1,700,000 Moravians are Roman Catholics. Industrious, enterprising, intelligent, lovers of liberty, they were always restless under Austrian rule and deserve the freedom that now seems theirs.

THE SLOVAKS

The Slovaks are mostly found in the northern provinces of Hungary. On the east they mingle with the Ruthenians and on the west with the Czechs, on whom they are wont to depend. They are a peaceful, primitive people. Having no national church, never having known independence until 1918, they inherit few traditions, but many popular songs. Their nobles are completely magyarized.

Until recently, Slovak merchants and the middle class generally wished to be taken for Germans. But the people have always resisted foreign control. Despite its sharp division into dialects, they have always cherished their language, their sole bond of union. The Magyars treat them with brutal contempt. Many have emigrated to the United States. Altogether they number about 2,500,000.

During the last fifty years there has been a marked awakening in education and national feeling. No longer indifferent to foreign domination, they enter upon a national existence of their own.

THE RUTHENIANS

Ruthenian, meaning Russian, was the name given by the Austrians to such of their sub-

Photograph by A. W. Cutler

MORAVIAN PEASANTS IN THE VICINITY OF PRESSBURG

Short skirts and Wellington boots seem to be the fashion here. Note the elaborately braided trousers and the cap made of gold cording worn by the man. The Moravians are to be found in the vicinity of the Morava River, occupying a plateau about the size of Massachusetts, directly south of the land of the Czechs and Slovaks (see page 492).

Photograph by A. W. Cutler

SLOVAK SISTERS IN THEIR SUNDAY FINERY

The Slovaks are a peaceful, primitive people, inheriting few traditions, but many popular songs. They are to be found mostly in the northern provinces of Hungary, mingling in the east with the Ruthenians and in the west with the Czechs (see page 492).

Photograph by A. W. Cutler

LIKE FATHER, LIKE SON IN HUNGARY

Note that the costumes are identical except that the sleeves of the garment worn by the boy are embroidered and not decorated with colored wools, as in the case of his father. The long apron, worn by the young and old of both sexes, is a feature of the native costume seen in Mezökövesd, a town to the east of Buda-Pest. Only by personal inquiry could one determine whether the subjects of this photograph are Slovaks or Ruthenians. These two branches of the Slav race mingle almost indistinguishably in this section of Europe.

Photograph by A. W. Cutler

PEASANT TYPES IN HUNGARY, NORTHEAST OF BUDA-PEST

The woman on the right carries her gander in the same fashion that the Indian squaw carries her papoose. The maid of Holland wears the distinctive badge of her town or district on her head; the Slovak peasant girl sometimes wears hers on her foot, as in the case of the girl to the left, whose boot-heel, elaborately embroidered, betokens the village from which she tramps.

jects as are Little Russians. There are more than 3,500,000 Ruthenians in the Austrian provinces of Galicia and Bukovina, territories seized from Poland. In Bukovina they are called Huzulians. They differ in few respects from the Little Russians of Russia. In Galicia they form nearly half the inhabitants, the aristocracy being Polish and the middle classes German or Jewish.

Though Roman Catholics, they use the Slavic liturgy and the Eastern Orthodox ceremonial. They were tranquil under the Austrian rule and in general manifest little sympathy for the Czecho-Slovaks or for the Poles. They naturally affiliate with their nearer kin, the Ukrainians, or Little Russians (see page 463). They are well known in the United States for industry and intelligence. The Ruthenian, Zolkievski, patriot and warrior, was the Chevalier Bayard of the Slavs.

Photograph by A. W. Cutler

DAMES AND DAMSELS RETURNING HOME FROM MASS ON A SUNDAY MORNING

In the land of the Slovaks, north of Pressburg, the young girls (those in front) usually go bareheaded, but after marriage their hair is "done up" and placed under a cone-shaped basket at the back of the head. When the wearer is on the street, this marriage millinery is covered with a fringed silk kerchief of bright hue.

THE MAGYARS

The Magyars are the dominant race in Hungary and the real founders of the kingdom. Finno-Ugrians, they first appear in Europe as a nomadic horde in the ninth century, crushing the Moldavian kingdom and seizing the territory which they at present occupy. From this center their wild raids over Europe made them a universal terror for sixty years. Then a severe defeat at Augsburg by the German Emperor, Otto I, showed their isolation among enemies of different race and faith, more civilized and more powerful than themselves.

Political considerations seem to have determined their leaders to adopt Christianity and enter the Roman Church. Wise sovereigns tranquilized the country and brought in many immigrants. In numerous cases special privileges were accorded. All others, native and foreign, except the Magyars, were treated as subject races, on whom most of the taxes were levied. The system of taxation was recently modified, but the principle of inferior races is still in force (see page 489).

The Magyars consider the Golden Bull, granted by Stephen II seven years after Magna Charta, as the earliest proclamation of constitutional rights in continental Europe. It confirms the excessive privileges of the great barons, the great wealth and power of whom were later, even under the ablest kings, to plunge the nation into anarchy and reduce the masses to serfdom.

The Magyars were for more than a century the buckler of Christendom against the Ottoman Turks. Their illustrious leader was Hunyadi, "the incarnation of Christian chivalry." They have never recovered from their crushing defeat by the Turks at Mohacs in 1526.

Their general condition was not improved by the fierce broils into which the Reformation plunged the Magyars, among whom for a time Protestantism was predominant. Through the marriage of a Magyar princess to an Austrian Archduke, the succession passed to the House of Hapsburg, when the Magyars soon found themselves also treated as a subject race.

Discontent brought about the attempted revolution under Louis Kossuth. Defeated, their leaders took refuge in Turkey. Combined Russia and Austria could not compel the Sultan to violate the laws of hospitality and give them up. This fact the Magyars have always gratefully remembered. In the Russo-Turkish war of 1877-78 several deputations of Magyars visited Constantinople to emphasize their friendship for their blood kindred, the Ottoman Turks.

In Hungary in 1910 there were 10,051,000

Photograph by Erdelyi

NATIVE WOMEN IN A MAGYAR VILLAGE

Instead of seeking to amalgamate the peoples of alien blood residing within the confines of their country, the Magyars pursued the unwise policy of treating all persons not of their own kin as subject races, upon whom most of the taxes were levied. As a result, instead of being a melting pot, Hungary became a retort, confining racial elements explosively antagonistic one toward the other (see page 497).

Magyars as against 5,380,000 various Slavs, 2,949,000 Rumanians, 2,037,000 Germans, 275,000 Gypsies, and 195,000 members of other races.

A glance at the map reveals how ominous are the racial influences surrounding the Magyars. West, there are the Germans; also, as the pink enclaves on the map indicate, numerous solid German communities in the very heart of the Magyars; north, the Czecho-Slovaks; east, the Rumanians; south, the Jugo-Slavs—all these like magnets attracting those of their kin still under Magyar rule.

Nor is the material outlook more reassuring. The Magyar nobles are land-poor, while the Germans and Jews are the chief employers of labor, carry on the trade, and, the Jews especially, control the press.

The Magyars are, with the exception of the Finns, the only thoroughly Europeanized Finno-Ugrian people.

THE POLES *

Next to the Russians, of whom they were long the rivals and foes, the Poles are numerically the most important of the Slavs. They first appeared in Great, or North, and Little, or South, Poland in the tenth century, where they found other Slavic tribes in possession. The wise policy of their kings early induced the whole nation to profess Christianity.

Of medium size, with round heads and healthful faces, the blond more common than the brunet, their physical appearance has apparently changed little. The working classes, who constitute nine-tenths of the nation, have always been laborious, frugal, enduring, temperate rather than abstemious, and intensely patriotic. Those qualities distinguish the thousands of Poles in the United States. Their szlacta, or nobles, have shown themselves impetuous, brave to rashness, chivalrous, insubordinate, emotional, artistic.

During the formative period Poland was consolidated by the dynasty of the great Lithuanian, Jagellon, the Polish Wadislaus II—a succession of princes unsurpassed in constructive ability. Union with the Lithuanians doubled the population and the natural resources. Together they crushed the Teutonic Knights at Tannenberg in 1410 and half a century later at the peace of Thorn pushed them east of the Vistula. The Polish lands on the Baltic, together with Danzig and Marienberg, were recovered. The Duchy of Mazovia, of which Warsaw was the center, five centuries independent, voluntarily joined the kingdom which a few years later spanned Europe from the Baltic to the Black Sea. The Reformation, regarded with suspicion as having a German origin, only for a time disturbed the country.

The advantageous situation of the kingdom, the admirable qualities of its common people, and the development already attained, seemed to assure the greatness and permanence of the Polish State.

Yet disappointment meets us on every page. The brilliant passages are episodes without connection or result. Nowhere else is so much valor wasted. The chasm was always widening between the nobles and the common people. The people paid all the taxes. The nobles, all equal, possessed all the wealth and power, but had no sense of obligation or responsibility. Intrepid in battle, they were ready to fight for the country only when so inclined.

The system of government was oligarchic in the extreme. Succession to the powerless throne was elective, native or foreigner alike eligible. Each election was an orgy of turbulence and bribery. Twice the throne was put up at auction. The liberum veto, established in 1652, whereby the negative vote of a single member of the Diet nullified any act or all the acts of all the rest, culminated the anarchy and eventually brought about the destruction of Poland.

Yet the criminal follies of a privileged class in no way excuse or palliate the iniquity of the three partitions of Poland in 1773, 1793, and 1795 by Prussia, Russia, and Austria. It must be noted that the first partition was confirmed by the Polish Diet, in which nearly all the members accepted foreign bribes.

The belated heroic resistance of Kosciuszko, of a handful of nobles and of the infuriated common people glorifies the fall of the State which some historians, confused by the farce of election, still call the "Republic" of Poland.

By these partitions Russia acquired 181,000 square miles of territory, with 6,000,000 inhabitants; Austria, 45,000 square miles, with 2,500,000 inhabitants; Prussia, 57,000 square miles, with 2,500,000 inhabitants.

The Poles under the Austrians were in the main kindly treated. Also, being Roman Catholics, there was no religious antipathy. Under the Russians every harsh measure was employed to accomplish their russification. Those under the Prussians were the most pitiably situated of all. In the effort to make them Germans there was no limit to the systematic, persistent cruelty directed against all classes and ages.

Poland has enriched the world in music, art, and literature. The national dances, the polonaise and the mazurka, were always accompanied by singing. Copernicus is Poland's greatest name. Sienkiewicz, victim of the world war, by many considered the most brilliant writer of the day, was a Pole, as is Paderewski.

Situated between the upper millstone of Prussia and the nether millstone of Russia, and at the same time subjected to lateral pressure from Austro-Hungarian armies, the land of the Poles during the world war suffered devastation which exceeds the imagination of those who have not actually witnessed the scenes of rapine, pillage, conflagration, and wanton destruction.

The restitution of a reunited Poland to its loyal common people will be among the worthiest achievements of the Allies.

One of the most difficult problems which the restored nation's leaders will encounter is the Jewish situation. There are millions of Jews in Polish territory. It is admitted by all thoughtful statesmen that great effort and sacrifice on the part of both the Poles and the Jews will be necessary before a satisfactory solution can be reached.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Partitioned Poland," by William J. Showalter (January, 1915), and "Devastated Poland," by Frederick Walcott (May, 1917).

THE JEWS *

On the Arch of Titus in Rome are carved in bold relief laurel-crowned soldiers, bearing a massive seven-branched candlestick. This rep-

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "An Old Jewel in the Proper Setting," by Charles W. Whitehair (October, 1918).

Photograph by Erdelyi

A MAGYAR HOME

The pillows in the background are a familiar feature of most well-to-do homes in Hungary. They form one of the chief items in a bride's trousseau; babies are carried on huge pillows; a mammoth pillow is usually the sole covering at night, while two smaller pillows frequently constitute the bed.

resents the Golden Candlestick which once lighted the Holy Place in the Temple at Jerusalem and which was carried directly before the conqueror Titus at his triumph. The Arch commemorates the conquest of Judæa in the year 70 and the destruction of the Temple and is contemporaneous with the first great dispersion of the Jews. Individuals had already settled in every city of the Empire, but there had been no general exodus. Now, destitute henceforth of a religious center, their world pilgrimage began. The Arch seems not so much a monument to a dead emperor as the perpetual reminder of a scattered and deathless race.

Sixty years after Titus, all Jerusalem was plowed over and Jews were forbidden to approach the spot on pain of death. The very name of the sacred city was proscribed, the heathen colony planted on its site being called Ælia Capitolina. Hundreds of thousands had perished in battle, massacre, and starvation. A people without a capital, country, or shrine, the dispersion of the survivors went on over all the known world.

Photograph by A. W. Cutler

GYPSIES: THE NOMADS OF EVERY LAND

Whence they come and whither they go is a puzzle not only to the dweller in city or country whom they pass, but to the student of races as well. Their origin is lost in the mists of legend and tradition. They are to be found in many countries of Europe, chiefly in the Balkans, in Hungary, and in Spain. He who is fascinated by the romantic subject of the Gypsies finds in the pages of George Borrow's "Lavengro" and "Romany Rye" accounts of these wanderers which are of absorbing interest. The man in the photograph is holding the silver-crowned cane which he uses when on the road. His coat is adorned with immense silver buttons (see page 502).

Rome had regarded the Jews merely as dangerous rebels who must be crushed. After they became powerless, they were allowed to live and prosper as they pleased. The Mishna, or Oral Law, the foundation of the Talmud, was evolved. Meanwhile a marvelous teacher, Mar Samuel, wrought into the very being of the exiles a principle that was to control their attitude and conduct. He taught that everywhere "the law of the government is the binding law," and that it was their religious duty, not from expediency, but from moral obligation, to conform to and obey, as far as possible, the laws of any country in which they were found. They were even to pray for the peace of the place wherein they dwelt.

Thus was their adaptation to any habitat made incumbent and possible. From it has come about the racial suppleness which bends but never breaks. To it Graetz, the foremost of Jewish historians, declares Judæism has owed "the possibility of existence in a foreign country." Through tribulation and agony, unexampled in the life of any other people, it has enabled the Jewish race to survive.

The nominal profession of Christianity by Europe set the Jew by himself apart. To an ignorant and brutal age every Jewish hand seemed red with the blood of the Saviour. That Jesus and the apostles were themselves Jews was sometimes denied. Under the mask of piety, every foul passion robbed and maltreated the Jews. The laws against them were more merciless than the mobs. In Italy they were at times less harshly treated through the influence of the Popes, and sometimes a great sovereign like Charlemagne would shine as their open friend. Yet, with rare exceptions, injustice, persecution, and proscription were their invariable, universal lot from Constantine far down into modern times. The severe Moslem laws against them were laxly enforced. So they shared the brilliant prosperity of the Moors in Spain until both were expelled.

The Jewish Year Book reckons there are today about 10,000,000 in Europe, 3,000,000 in the United States, and 1,000,000 in the rest of the world. It reckons 100,000 in France, 106,000 in the Netherlands, 230,000 in Rumania, 257,000 in the United Kingdom, 615,000 in Germany, 1,300,000 in what was formerly Austria-Hungary, and 7,000,000 in Russia. In Denmark, Norway, Sweden, Portugal, and Spain there are comparatively few.

The great number in Russia largely trace back to Casimir the Great, a Polish king. His favorite, Esther, a devoted Jewess like her namesake in the Bible, persuaded Casimir to offer the Jews a home in Poland. The Jews had multiplied, especially in that part of Poland which Russia secured in the three partitions and which, with constantly changing boundaries, constituted the Russian Pale. When Casimir died, in 1370, Polish toleration ended. Instead there was often the ferocious shout, "Hep, Hep!" with which the pogrom began. A pogrom is an organized massacre and "Hep" is supposedly derived from the initials of "Hierosolyma est perdita."

The fires through which the Jews have passed only intensified their remarkable domestic and racial devotion. There is no position of honor or confidence where one does not now find a Jew. There is no height or distinction—political, diplomatic, financial, dramatic, artistic, literary—which the sons and daughters of Israel have not attained.

THE GYPSIES

The Gypsies are first found in the Greek islands and continental Greece early in the fourteenth century. No tradition exists as to how they arrived or whence they came. Afterward, they wandered through the Balkan Peninsula, settling nowhere except as the greater number were seized along the way and made serfs or slaves.

In 1417 they appeared in western Europe, showing a peculiar pass or safe-conduct wherein they were called Tsigani. This pass, signed by Sigismund, king of Hungary and German emperor, granted permission to go wherever they pleased in the king's dominions, ordered his subjects to show them kindness and protection, and forbade interference with them of any sort. A little later their roving bands reached Italy, France, and the British Islands.

Believed to have come from Egypt, their English name was Gypsies. The French, however, called them Bohemians, thinking they had originated in Bohemia. They called themselves Rom, supposed to mean *man*. This term was possibly picked up in passage through southeastern Europe. Among their many other names were Hagarenes, children of Hagar, Saracens, as from Arabia, and Athingani, or "Touch-me-nots," from a heretical sect in Asia Minor.

Restrictive laws have hampered and sometimes entirely curtailed their former vagrancy. Most Gypsies now live in houses, though still retaining their restless propensities. Existing in every country, they have been accurately counted nowhere. There are probably not over 700,000 in Europe, of whom three-fourths are located in Hungary, Rumania, and the Balkan Peninsula, where they enjoy the same civil rights as the other inhabitants. Without country or traditions or religion of their own, they readily profess whatever is nearest.

The Gypsies are of wiry figure, with black, often silky, hair; large, shining, black eyes; perfect teeth, regular and white, and a glowing rich complexion, which early becomes tawny. Their young women often possess a brilliant but soon fading beauty. In music and dance, the untrammeled freedom of the race finds full expression. Liszt ascribes to the Gypsies "the origin of Hungarian national music." Many of the most popular Rumanian, Serbian, and Bulgarian ballads and tunes are derived from the Gypsies.

Our chief interest in the Gypsy is his language. Toward the end of the eighteenth century three scholars, working apart and unknown to one another, discovered that his "jargon" is a primitive Indo-European language, now spoken nowhere else and contained in no manuscript or book. Corrupted and debased, yet radically the same, it has been preserved through uncounted years and unknown wanderings on the lips of this mysterious people. An eminent Oriental investigator, Dr. Paspati, believed that the Romany was an ancient sister of the Sanscrit and that the Gypsy is the most ancient Indo-European in Europe.

THE GERMANS *

The name German during these last years has been so blackened and befouled by its own children that it can never regain its former place in the respect and esteem of men. But, before militarism destroyed idealism, before the Prussian virus poisoned the German soul, there was no department of research, art, or literature which the Germans did not distinguish. Obscured from the world's thought today by an interposing pall are the thinkers, poets, philosophers, and reformers of Germany's great past.

The main body of Germans has occupied the same territory from a period antedating the Christian era. Though absorbing many Slavic elements, they are as a people less composite than the Italians or the French.

The number of inhabitants of the German Empire at the last census, inclusive of 1,870,000 persons in Alsace-Lorraine and of 1,260,000

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Peasant Life in the Black Forest," by Karl Frederick Geiser (September, 1908); "A Corner of Old Wurttemberg," by B. H. Buxton (October, 1911); "The German Nation" (September, 1914); "Hildesheim, the Town of Many Gables," by Florence Craig Albrecht (February, 1915).

Photograph by Erdelyi

A FARMER OF BANFFYHUNYAD, A VILLAGE OF TRANSYLVANIA

Within the limits of Transylvania ("forest land"), an area of eastern Hungary about half the size of the State of Virginia, reside three "privileged peoples"—the Magyars, the Szeklers, kinsmen of the Magyars, and Saxons, descendants of German immigrants who came into the country in the twelfth century. Numerically, however, the most important element of the population is Rumanian. In addition, there are Jews, Ruthenians, Bulgarians, Slovaks, Serbians, and Greeks. The plurality of Rumanians forms the basis of their country's claim to a large portion of this district, rich in mines, forests, pasture lands, and river-bottom farms.

Painting by Eugene Burnand

THE JEWISH TYPE

The Jewish Year Book reckons the number of Jews in Europe today as 10,000,000; in the United States 3,000,000, and another 1,000,000 scattered throughout the rest of the world. In the famous painting here reproduced the Swiss artist, Burnand, depicts two of the Disciples, Peter and John, hurrying to the Sepulchre. The canvas hangs in the Museum of the Luxembourg, Paris.

foreign residents, was 64,926,000. Subtracting the foreigners, the people of Alsace-Lorraine, and 3,500,000 Slavs, mostly Poles, there remain about 58,000,000 Germans. Adjacent, strongly attached to them, are the 10,000,000 Austrian Germans and the nearly 300,000 in Luxemburg and Liechtenstein, making a total German population in Central Europe of approximately 70,000,000.

The distinction of Low Germans, dwellers in the Lowlands, and High Germans, dwellers further south, on higher ground, early indicated forms of the language and literary expression.

More than any other race in Europe, the Germans in Germany have inter-bred among themselves. In consequence, they have developed traits which in a smaller people would be termed provincial—inordinate self-satisfaction, sense of superiority to other nations, and marked incapacity as colonizers. While making good colonists under other flags than their own, as colonizers under their own flag they have failed utterly.

Despite all inducements offered by their government, they were themselves reluctant to emigrate to German colonies except as State functionaries or soldiers. In 1914, in the more than 1,000,000 square miles of German colonial possessions, there were less than 25,000 white residents, inclusive of foreigners. Moreover, German treatment of the natives is seldom kindly, but in general brutal and inhuman.

Yet German enterprise and discontent with former conditions in the fatherland carried them by hundreds of thousands all over the globe. In the United States there are over 2,500,000 persons who were born in Germany, most of them loyal and efficient American citizens.* There are over 2,000,000 in Hungary and 1,500,000 in Russia, long resident in those countries. In South America there are more than 500,000.

In 1914 German or of German origin were

* See in NATIONAL GEOGRAPHIC MAGAZINE, "Our Foreign-born Citizens" (February, 1917).

JEWISH CHILDREN IN POLAND

The reason for the great number of Jews now found in Poland may be traced back to the days of Casimir the Great, a Polish king, whose favorite, Esther, a devoted Jewess, persuaded her royal lover to offer her people a home in his dominions. When Casimir died, in 1370, Polish toleration ended, and during the succeeding centuries the lot of the Jew has been an unhappy one. Marriage vows are taken early by the Jews in Poland; a girl scarcely ceases to play with dolls before she has babies of her own, and a woman twenty-five years old is frequently the mother of six or seven children (see page 499).

the reigning houses of Austria-Hungary, Belgium, Bulgaria, Denmark, the German Empire, and each of its 25 States except the Slavic dynasty of the two Mecklenburgs; Great Britain, Greece, Holland, Liechtenstein, Luxemburg, Norway, Rumania, Russia, and Sweden. In Great Britain the royal house, long thoroughly anglicised, by royal proclamation in 1917, changed its title from "House of Saxe-Coburg and Gotha" to "House of Windsor." In Belgium and Rumania the rulers identified themselves with their people. The monarchs of the no longer existing Austro-Hungarian, German and Russian empires are either fugitive or dead.

Until 1871 the term German was an ethnic or geographical expression without national meaning. There had never been a real German nation. Instead had existed an indefinite number of political units—kingdoms, duchies, free cities, loosely connected or not connected at all—in European wars usually taking opposite sides. The number of such units had been gradually reduced to twenty-five. This was an inheritance from the tribal system, often deplored by German patriots and statesmen. Acting together for the first time in the war of 1870-71, they conquered imperial France.

The proclamation of the Empire on January 18, 1871, at Versailles, in the throne room of Louis XIV, the arch foe of the German race, was most spectacular. German union seemed achieved. On April 16 the sovereigns of the five larger German States granted the Empire a Constitution, in the making of which the people had no share. This Constitution rendered Prussia and her Hohenzollern King supreme in Germany. The Constitution could in no way be changed without the consent of the King of Prussia, who was German Emperor, except by revolution (see map, page 510).

The revolution has now been accomplished. But peoples and races remain, though thrones and empires fall. After present troubles are pacified and wrongs righted, in the very center of the continent will exist a compact, homo-

A. H. Bumstead, Cartographer

THE PHYSICAL MAP OF EUROPE

Here are shown the mountain systems and the river valleys which have determined the course of invading hordes and have modified the racial traits of immigrant peoples (see text, page 448)

geneous, ethnic group of Germans, 70,000,000 strong. Because of the enormities of the past four and a half years, this group cannot be trusted until they have shown repentance not of a few days or months, but by a generation or more of decent action.

The nascent Slavic republics of Czecho-Slovakia (see page 489), Poland (see page 499), and possibly Lithuania (see page 465), to the east of the Germans, and of Jugo-Slavia (see page 485), on the south, could easily be honeycombed with discontent and mutual jealousies by the scheming junker class of Prussians Thereby would be created in the heart of Europe another political volcano always in eruption, closely analogous to that which kept the Balkans in continual convulsion prior to the world war. Unless from the Germans are exacted such guarantees of good conduct as can neither be escaped nor evaded, the world is handing over these enfranchised races to become the ultimate prey of men who are bound neither by justice, nor honor, nor mercy in their dealings with mankind.

In the German group specially prominent are the Prussians, the Bavarians, the Saxons, and the three Free Towns of Lübeck, Hamburg, and Bremen.

The Free Towns were the largest factor in the spread of German influence during the Middle Ages. These three associated with themselves for mutual protection ninety of the principal commercial cities between the Rhine and Novgorod. This association, called the Hanseatic League, or League of the Guilds, from 1241 for more than four hundred years defended the rights of trade and was supreme in northern Europe. Under normal conditions the maritime and commercial interests of Lübeck, Bremen, and Hamburg are immense. The citizens, proud of their self-governing traditions, are democratic in sentiment.

The Saxons are of almost pure Teutonic stock, with slight Slavic admixture. They occupy one of the most fertile regions of Germany. Formerly they were renowned for their independent spirit. For thirty-three years they stubbornly fought against Charlemagne, who finally conquered and Christianized them. During the nineteenth century they constantly progressed in constitutional liberty until the Prussians occupied their territory in 1866. They rank among the most highly educated people of Europe. Dresden, their capital, is a center of art and industry. More than 95 per cent of the Saxons are Protestant.

THE BAVARIANS

The Bavarians are racially the most composite people of Germany, being descended from Germanized Slavs, earlier Celtic settlers, and Teutonic Marcomanni and Quadi. The latter entered the country from the east and were called Baivarii, probably from *Bojer,* as they had come via Bojerland or Bohemia.

They inhabit an immense amphitheater, about 220 miles long and 110 miles broad, surrounded by lofty mountains. No other territory of equal size in Germany is enclosed by natural boundaries so distinct; consequently the Bavarians have developed a character of their own. Physically they are darker, smaller-boned, more natural, and less stiff than Germans generally. They are conservative, religious, and affable.

The Passion Play has been rendered every ten years since 1634 by the Bavarian peasants of Oberammergau. Sovereigns and people have fostered music and the drama, and their capital, Munich, is a school of all the arts. The bronze doors of the Capitol in Washington were cast in a Bavarian foundry. Count Rumford, philanthropist and man of science, born in Woburn, Mass., and for eleven years Bavarian Minister of War and Police, reorganized labor and reformed social conditions.

Always hostile to Prussia, the Bavarians since their subjection in 1866 have of necessity sullenly submitted to Prussian control. Religious differences intensify the separation, seven-tenths of the 6,000,000 Bavarians being Roman Catholics.

THE PRUSSIANS *

The Prussians derive their name and origin from the Borussi, a fierce, large-boned people, kindred of the Lithuanians and Letts (see pages 464-465), living in the tenth century on the lowlands of the Oder, Vistula, and Niemen. Almost exterminated by the Teutonic Knights, the survivors besought the intervention of Poland, which annexed those west of the Vistula. In 1525 Albert of Hohenzollern, grand master of the Knights, declared himself a Protestant and surrendered his lands to the King of Poland, who thereupon created Prussia a Grand Duchy and made him Grand Duke. His remote descendant, Frederick, having bought the title of king from the emperor at a great price, with extraordinary pomp at Königsburg, where he was born, crowned himself King of Prussia, January 18, 1701.

The Prussians, though completely Germanized, always differed from and were disliked and mistrusted by the other Germans. Von Treitschke says of Prussia, "from its beginning the most hated of German States." Goethe wrote, "The Prussian was always a brute and civilization will make him ferocious." The Prussians have always manifested peculiar traits, possibly derived from their common ancestors, the merciless Knights and the fierce Borussi.

At accession Frederick possessed a kingdom of 40,000 square miles and 1,500,000 inhabitants. A year ago Prussia comprised 140,000 square miles and 40,000,000 inhabitants.

This surprising result was accomplished by a continuous, consistent policy of employing duplicity, violence, or any infamous means to acquire territory and people. While the name

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Prussianism," by Secretary of State Robert Lansing, and "Germany's Dream of World Domination" (June, 1918).

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POLES IN PROCESSION AT THE FUNERAL OF A FAMOUS AMERICAN PRELATE

The square-topped caps distinguish the uniforms of the Polish soldiers, while the foremost private citizen of Poland, Ignace Paderewski, leads this contingent of his countrymen who are paying a final tribute to the late Cardinal Farley. Thousands of Poles in America who had not been naturalized, and therefore were not subject to the draft, volunteered for service against the Germans and were trained at a mobilization camp near Niagara Falls. On the western front the Polish Legion shared honors of war with the famous French Foreign Legion (see also page 499).

Prussian is applied to all Prussian subjects, the great majority belong to States spoliated or destroyed.

This system was endured and favored as long as attended by the glamour of foreign military success. In the wars with Denmark, Austria-Hungary, and France, it intoxicated by triumphs, electric in rapidity. But the first great disaster was sure to hurl it to the ground amid the awakened scorn and detestation of the German people. The political delirium now sweeping over Germany is manifestation of this awakening.

SLAVIC TRIBES IN GERMANY

Slavic tribes, formerly scattered through Germany as far as the Elbe, have been almost entirely absorbed into the German population. The Polabs, once numerous, were probably the last to disappear. The district in eastern Hanover, where their language was spoken as late as the seventeenth century, is still called Wend.

In Lusatia, the name derived from the Slav tribe Lusitzi, now belonging to Saxony and Prussia, there are about 170,000 Sorbs, or Wends. In most difficult circumstances they have resolutely retained their language and customs in the midst of a German population eight times their number. Forgotten by the world and gradually becoming Germanized, they were vitalized by a remarkable nationalistic awakening at the beginning of the nineteenth century. Ill-treated in Prussia, they have been favored in Saxony, where their capital, Bautzen, is an intellectual center. Their language is intermediate between Polish and Czech.

THE SCANDINAVIANS *

The Scandinavians, or the Danes, Norwegians, and Swedes, Teutonic peoples, are so intimately related in race and history that, except with frequent repetition, it would be impossible to discuss them separately. Scandinavian is a term of unknown origin and meaning, long used to include them all.

The vast, elongated northern peninsula between the Gulf of Bothnia and the Atlantic doubles in breadth towards the south and biforks as if to admit the peninsula of Denmark between its extremities.

West Denmark and Norway look outward upon the ocean, whose shores the Scandinavians were to harry and conquer. East Denmark and Sweden look inward upon the Baltic and Europe. They planted settlers north of the Gulf of Finland, and east of the Gulf of Bothnia, and placed a Varangian Prince on the Russian throne (see page 457).

From the human hive of Sweden, the Goths swarmed to Germany and southern Russia and thence to Italy and Spain, leaving their name everywhere in Sweden, as at Gothenburg and in the fabulously rich Gotland, where "the women spun with distaffs of gold" (pp. 453-4).

In like manner, from overcrowded Norway great waves of emigration flowed to the plains of the Rhine and Elbe. The ocean, however, opened larger opportunity. Romance attaches to raids by sea, and the term viking has a lordly sound. But viking, from an old Norse word, means freebooter, or pirate; and nothing more than pirates the heathen vikings were; brave, looting, kidnapping, burning, and then fleeing in their high-pointed galleys. For two centuries they were the curse of the British Islands and of France. Then they began to remain on the lands they had ravaged and to resist later pirates like themselves.

The Norwegians today inherit all the bravery and sea skill of the vikings, without their barbarism and cruelty. In 1913 they had a larger tonnage of merchant shipping than any other country except Great Britain, the United States and Germany. The Scandinavian immigrants into the United States have been numerous and welcome.

In 1864 Prussia seized the Danish provinces of Schleswig and Holstein, thus appropriating over seven thousand square miles of territory and a million and a half people.

In the Kingdom of Denmark, in 1918, there were about 3,000,000 inhabitants. Denmark possesses Greenland and Iceland. Norway had about 2,400,000 inhabitants in 1910; Sweden, 5,758,000 in 1916.

The great majority of the Scandinavians are fair-haired, blue-eyed, light-complexioned and long-headed. In general the Norwegians and Danes are democratic; the Swedes less so.

Christianity was definitely established among the three nations in the eleventh century after obstinate resistance by the natives. All are now intensely Protestant.

The ancient Scandinavians had a common Teutonic language known as Donsh Tunga, called by the Norwegians Old Norsk. This the Norwegians, who settled in Iceland in the tenth century, carried with them. Into Norway four centuries later Queen Margaret introduced Danish, and Norsk or Norse is now used only by the peasantry. But in Iceland the old tongue survives in purity. Danish, spoken with strong Norwegian accent, is readily understood in Sweden, and Swedish, with greater difficulty, by the Danes.

Thorwaldsen, the sculptor, and Hans Christian Anderson, author of the fairy tales, were Danes; Ole Bull, the violinist; the explorer, Nansen, and Amundsen, the discoverer of the South Pole, Norwegians; Frederika Bremer, the authoress; Jenny Lind, the "Swedish Nightingale," and Linnæus, father of botany, Swedes.

The three nations, though sometimes under one sovereign, have often fought one another, Norway in heart if not in arms generally on the side of Denmark. Now the three are not unfriendly. None the less, songs and plays, rehearsing victories over the Danes, are always popular in Swedish theaters.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "In Beautiful Delecarlia," by Lillian Gore (May, 1909).

THE DUTCH *

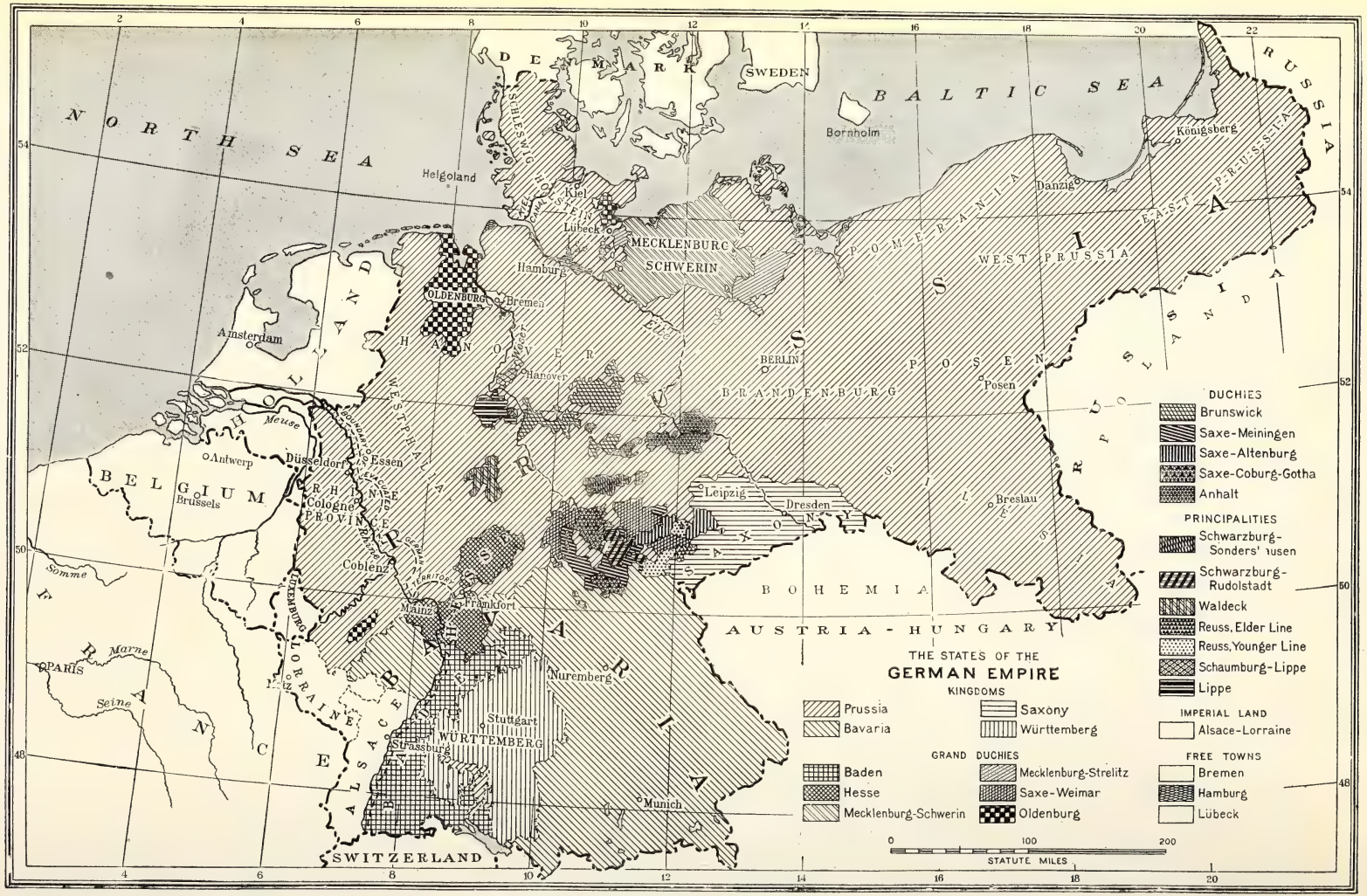
This name, formerly comprehensive of all the Germans and from all its etymology signifying popular or national, is now applied in English only to the people and language of the Netherlands.

Their country being below sea-level, they wrested the land from the ocean by dikes. In the sixteenth century they defeated Philip II of Spain while at the height of his power. In the seventeenth century they checked the theretofore victorious career of Louis XIV and contended on equal terms with England for the mastery of the seas. Such achievements by a people numerically weak attracted the attention of Europe and in England made the Netherlanders preëminently the Dutch.

They were the first people to afford an asylum for free thought. People, elsewhere ostracised, betook themselves to Amsterdam or Rotterdam as later to London or Geneva. Our Pilgrim Fathers, persecuted at home, found refuge in the Netherlands for twelve years before sailing for the New World in the *Mayflower*.

The long conflict with Philip II revealed and intensified the character of the people. All the Netherlanders were equal in love of liberty. But the northern provinces were agricultural

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Holland as Seen from a Dutch Window," by James Howard Gore (September, 1908); "Glimpses of Holland," by William Wisner Chapin (January, 1915), and "The City of Jacqueline," by Florence Craig Albrecht (January, 1915).



A. H. Bumstead, Cartographer

A MAP SHOWING THE STATES FORMING GERMANY IN NOVEMBER, 1918

Many of the twenty-five divisions of the German Empire were in turn subdivided. For example, while the major portion of the Grand Duchy of Oldenburg is washed by the waters of the North Sea, a very considerable detached fragment of its territory is to be found northeast of Lorraine and northwest of Bavaria, while a third portion adjoins Lübeck, on the Baltic. Bits of Prussia were scattered throughout the other kingdoms,

and Protestant and all spoke Flemish or Frisian. The southern provinces were industrial and Roman Catholic and a large proportion of the people spoke French. These conflicting interests resulted in separation. The northern became the States General of Holland. The southern remained under Spanish or Austrian rule until the French Revolution. Forced together on the fall of Napoleon, the southern or Belgian provinces broke away in 1830 and formed themselves into the kingdom of Belgium.

There were in 1916 about 6,600,000 Dutch. The old Frisian element is still strong in the north, though partly assimilated by the predominant Dutch. Despite the influx of foreigners, the character of the people and the racial stock have been little modified. Hugo Grotius, the father of international law, and Erasmus were Dutch.

The Netherlands had a prominent share in discovery and in the settlement of the New World. New York was long the province of New Netherlands; the city was New Amsterdam. Dutch influence was one of the strongest factors in shaping American political institutions. Two Presidents of the United States were of Dutch ancestry.

THE SWISS *

The Swiss of today present a more interesting subject of study than does the unsolved problem of their remote ancestors, and of the occupants of the pile dwellings in their lakes. They are the direct descendants of the Latinized Celtic Helvetii, of the warlike Alemanni who pushed into their mountains from the north, of Burgundians coming from the west after sojourn in France, of Rhætii on the east and of Italians fleeing from the south. Diversity and tolerance were their characteristics from the first. It was the "Men" of Uri, the "Community" of Schwytz and the "Association" of Unter-Walden who drew up in Latin their "Everlasting League" in 1291.

The story of William Tell and the Oath of Rutli, though they disappear from authentic history, are instinct with the spirit which won "the small battles of immortal memory," Morgarten, Sembach, Næfels, Morat, Keppel, and innumerable more. Zurich and Geneva have since been centers of culture, but the three Forest Cantons are the synonyms of heroism and liberty.

The Cantons have slowly increased from three before 1300, ten before 1500, all in the valley of the Aar, to the present twenty-two. Valais, Neuchatel and Geneva in 1815 were the last additions.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "In Valais," by Louise Murray (March, 1910); "A Woman's Climbs in the High Alps," by Dora Keen (July, 1911); "Mont Blanc and the Swiss Alps," by W. W. Hyde (August, 1913), and "The Citizen Army of Switzerland" (November, 1915).

Fifty-seven per cent of the inhabitants are Protestants and forty-three per cent Roman Catholic. Seventy per cent are German-speaking, twenty-two per cent French-speaking, nearly seven per cent Italian, and slightly over one per cent Romansch, all equally Swiss. In the Canton of Grisons, and nowhere else, Ladin is spoken, "a laggard sister of French and Italian." German, French and Italian are equally official languages. Of the 3,880,000 inhabitants, 550,000 are foreign residents. The area of Switzerland is about the same as that of Maryland and Delaware united.

Adjustment of cantonal, individual, and racial interests has not been easy. The Swiss, until within the last seventy years, have experienced internal dissensions and civil war. But the goal of a well-nigh perfect union has been reached.

Their "twenty-two small States, differing from each other in nearly every point, religious, political, social, industrial, physical, and linguistic," constitute a federal republic which in maintenance of public welfare, individual rights and general harmony is unsurpassed among the political creations of all time.

THE ITALIANS *

One of the marvels of human history is the extraordinary Italian race that for 2,000 years has blessed the world with one succession of geniuses—inventors, musicians, authors, creators of inspiration and advancement—from which all other peoples have benefited.

The Italians, like the Americans, are a most composite people. Nowhere else in Europe have so many foreign elements fused with the native element to produce a modern nation. Successive fusion was the practice at Rome from the time the city comprised hardly more than the Palatine Hill, even down to the time it became a world empire. Since then circumstances rather than a basic principle have determined fusion.

Roman citizens were the direct ancestors of the Italians. But not they alone. At the time of Christ very many of the inhabitants of Italy were slaves. They were the strongest, most perfect physically, and most capable from among the peoples the Romans subdued.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Austro-Italian Mountain Frontiers" (April, 1915); "Frontier Cities of Italy," by Florence Craig Albrecht (June, 1915); "Italy, the Gifted Mother of Civilization," by Arthur Stanley Riggs (October, 1916); "Our Littlest Ally" (San Marino), by Alice Rohe (August, 1918); "Little Known Sardinia," by Helen Dunstan Wright (August, 1916); "A Country Where Going to America Is an Industry" (Sicily), by Arthur H. Warner (December, 1909); "Gems of the Italian Lakes," by A. E. Mayer (August, 1913), and "The Battle-field of Nations and of Nature" (Sicily), by Mrs. George C. Bosson, Jr. (January, 1909).

Photograph by G. Heurlin

A GATELOAD OF SMILES IN SWEDEN

"From the human hive of Sweden the Goths swarmed to Germany and southern Russia and thence to Italy and Spain, leaving their name everywhere in Sweden, as at Gothenburg and in the fabulously rich Gotland, where 'the women spun with distaffs of gold'" (see text, page 508).

Like Nebuchadnezzar at Jerusalem, the Roman conqueror chose and carried off "men of valor," "the craftsmen and smiths," but left behind "the poorest sort of the people of the land." For centuries at Rome the school teachers were always slaves, their office designated by a Greek title. The proudest families of Italy have no need to blush that the blood of Roman slaves courses in their veins.

From each of the innumerable invasions from the north many permanent settlers remained.

Foreign interference and domination fills the story of Italy through the Middle Ages and far into modern times, relieved by isolated, brilliant efforts of City States at self-government and order. Discouragement pervaded all classes of society.

And yet, while swinging between despotism and anarchy, Italy evolved the most beautiful of modern languages, a rich and varied literature, and the loftiest expression of art. Furthermore, she rendered the world her debtor for inventions and discoveries of the highest rank and for precious contributions to the humanities and inductive science.

Moreover, from her ancient capital, as the spiritual center of the Roman Church, was radiating the sole humanizing influence in an age of universal turbulence and lawlessness.

One shrinks from the attempt to name a few of the greatest Italians. It is well-nigh impossible to select from so numerous a host. There is "not a department of human knowledge from which Italy has not extracted glory; no art that she has not adorned"—Virgil, Marcus Aurelius, Dante, Tasso, Columbus, Raphael, Michel Angelo, Da Vinci, Galileo, Canova, Savonarola, Torricelli, Galvani, Volta, Marconi.

In 1870 long-disappointed dreams were realized and Italy was reunited. She has since lived under a constitutional system which resembles that of England more than does the system of any other country on the continent.

No mere consideration of material gain in territory and population nerved the Italian arm in the last war, but the burning desire that Tyrolian and Friulian kindred should enjoy the freedom and good government which the emancipated in the mother country had won.

Italy in 1917 had about 37,000,000 inhabitants and an area of over 110,000 miles. Since then the Italians have conquered the enemy and the Alps, and their brethren, formerly under a foreign yoke, have been redeemed. Historical causes have produced many differences of dialect, which are gradually disappearing. The Tuscan of Florence is the purest Italian.

Sicily and Sardinia are of nearly equal size, about 10,000 square miles; but Sicily, with almost 3,000,000 inhabitants, is four times the more populous.

The three islands—Sicily, Sardinia, and Corsica—the latter a department of France, have had an existence as chequered as the mainland.

In Sardinia, the least disturbed by invasion, there is very small intermixture of foreign blood. The Sardinians are the shortest of the Italians. Hence Sergi infers they are descendants of an early pigmy race from central Africa.

Corsica and Sicily have been submerged by every wave of Mediterranean invasion and have changed masters many times. Corsica is content as part of France, but in early race and modern language resembles Italy more than do Sicily and Sardinia. All were early inhabited by Greek colonists. The Greeks maintain that the Bonapartes were of Greek origin, originally called Kalemerida, of which Buonaparte is the literal translation.

The islanders are sober, courteous, proud, implacable, and have high sense of honor. Physically they are strong and hardy.

THE MALTESE

Before the ascendancy of the Greeks and Romans the Phœnician language was supreme in the Mediterranean. In every colony, except one, which the Phœnicians founded, their language has been superseded and forgotten. But Malta, though a British possession, is still, as it was called by Diodorus Siculus, who lived in the time of Christ, "a colony of the Phœnicians."

One-seventh of the Maltese understand Italian, which is the language of the law courts. One-tenth can speak English, the use of which is increasing. Practically all of them speak daily the lingua Maltésé, once considered "Un arabe corrompu mélé d'italien," now recognized as not Arab at all, but a Phœnician dialect. This unique survival of an elsewhere extinct language surpasses in interest all the many memorable invasions and sieges which Malta has known.

The civil population of the three islands—Malta, Gozo, Comino—was 223,741 in 1917. Though the aristocracy are partly Norman, Italian, or Spanish, the people have been little affected by foreign influence. They are of an alert and well-proportioned figure, with expressive and usually attractive faces, in general lighter than the southern Italians. They are industrious and frugal and are devoted to their families and the Roman Catholic Church.

The rocky and barren islands afford scant sustenance, so the men are forced to seek employment throughout the Levant, bringing their earnings home after each absence. They claim that Hannibal was born in Malta. At any rate they could attempt converse with him or with Queen Dido or Hiram of Tyre, should those ancient personages return to earth.

THE RACES OF THE IBERIAN PENINSULA

Geography does not account for the existence of two peoples side by side, absolutely distinct, yet in most respects similar, with no apparent cause for separation. Nature, from the Pyrenees to Gibraltar, from the Mediterranean to the Atlantic, indicates common na-

Photograph by A. B. Wilse

A NORWEGIAN MAUD MULLER AT WORK ON AN UPLAND FARMSTEAD

Seventy per cent of the area of Norway is barren and more than twenty per cent is forest land, yet the remaining area (less than one-tenth the total) employs directly or indirectly fully forty per cent of the population.

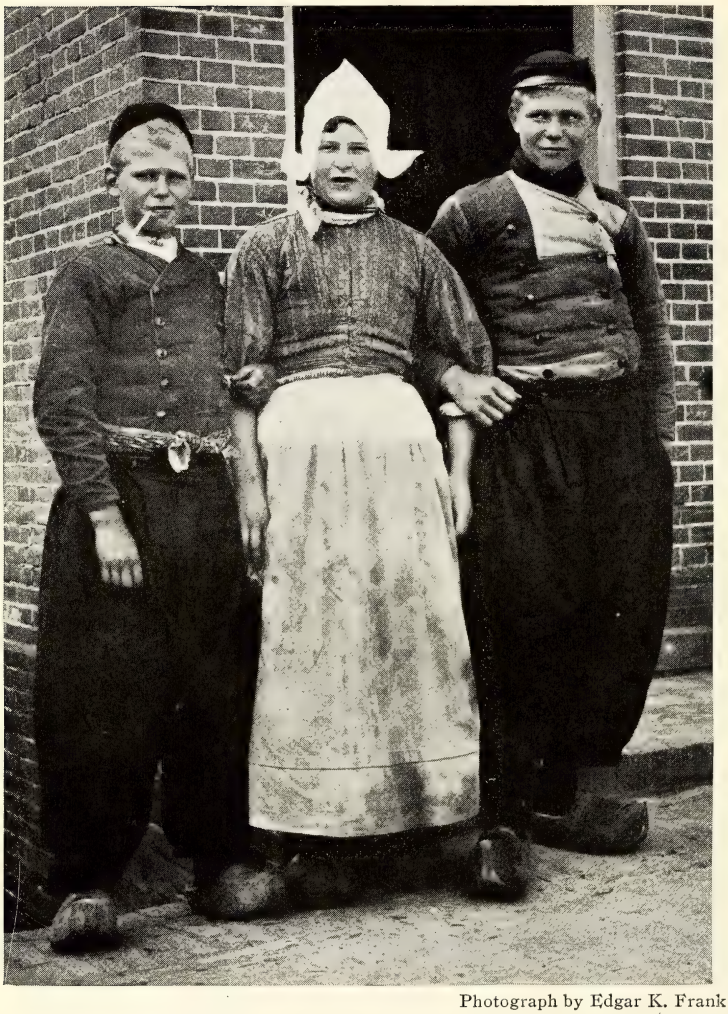
DEMURE DAUGHTERS OF TULIPLAND: HOLLAND

There were in 1916 about 6,600,000 Dutch. Despite the influx of foreigners into the Netherlands, the character of the people and the racial stock have been little modified (see text, page 509).

tonal interests and a common destiny. There are no outward barriers. The same mountain chains, the same deep valleys, the same rivers, traversing both, create natural bonds (see map on page 506).

Only by a sort of mental wrench can the interwoven threads of Spanish and Portuguese racial life be torn apart. But the prominence of each, the great rôle which each has filled in world affairs, require that they be discussed separately. At first, however, we must consider what the peninsula bequeathed them in common.

Phœnician and Greek traders or colonists, and even the later-arrived Carthaginians, were apparently welcomed by the early Iberi and Celtiberi. Then followed the familiar story of ineffective resistance to Roman aggression. When the Teutonic invaders poured through the Pyrenees or doubled them in their ships, they found a completely Latinized people, enjoying the full Christian civilization of Rome. The Suevi established themselves in the northwest angle, between the Bay of Biscay and the ocean; the Vandals spread along the southern coasts; the Visi-Goths occupied all the remain-



Photograph by Edgar K. Frank

A STURDY, INDUSTRIOUS, EFFICIENT TRIO, TYPICAL OF THEIR RACE—THE DUTCH

The world owes much to the folk whose ancestral home is the land wrested from the sea and preserved by dikes. The Dutch were the first people to afford an asylum for free thought. People ostracized from their own countries betook themselves to Rotterdam and Amsterdam, as they later did to London, to Geneva, and finally to America.

ing country, even across the Pyrenees as far as the Loire, in France.

In unusual degree Spanish and Portuguese language, life, and character are the product of historical development. Yet little line of cleavage between them appears until after the invasion of the Moslem Saracens and Moors. That invasion, begun in 710, deluged the entire peninsula. Charlemagne, hastening to repel the invaders, was defeated at the Pass of Roncesvalles and hurled back. The resistance of the Christians, at first hopeless, never relaxed.

THE PORTUGUESE *

The Portuguese poets attribute the separate existence of their nation and language to the Lusitani, who once occupied the west of the peninsula as far north as the Douro, and are immortalized by their intrepid attacks upon the Romans. At least from them Lusitania, the poetical Latin name of the country, is derived.

Portugal was born on the battlefield. That was the age of chivalry. War against the infidels, antedating the Crusades, attracted the foremost knights of Christendom. Among them was Henry of Burgundy, in prowess little inferior to the Cid. Alphonso of Castile rewarded his valor with his daughter's hand and created him Count of Portus Kale on the Douro. The son of Henry, Alphonso, against desperate odds, inflicted a great defeat on the Moors at Ourique in 1139. His exultant soldiers proclaimed him King of Portus Kale, now become Portugal.

Henry refused the crown conferred only by the army. A States General was convened to overcome his scruples. That assembly is remarkable. In it, for the first time in European history, representatives of the common people sat and acted as full equals of the clergy and nobles.

The assembly showed the instinct of newborn nationality. Its enactments frequently repeat Portugal and Portuguese, as if the words were pleasant. The attacks of Castile, which regarded the Portuguese as rebellious vassals, unified the nation. Their less sonorous, more nasal western dialect, heretofore disdained, was now encouraged as a brand of nationality.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The Greatness of Little Portugal," by Oswald Crawford, and "The Woods and Gardens of Portugal," by Martin Hume (October, 1910).

COURTSHIP AND COQUETRY IN SWITZERLAND

The federal republic of Switzerland, composed of twenty-two States differing one from the others religiously, politically, socially, and industrially, maintains in an unsurpassed manner the public welfare, individual rights, and general harmony (see text, page 511).

Photograph by A. F. Sherman

"OPEN MY HEART AND YOU WILL SEE GRAVED INSIDE OF IT 'ITALY'" (SEE ALSO PAGE 449)

The Italians, like the Americans, are a most composite people. Nowhere else in Europe have so many foreign elements fused with the native element to produce a modern nation (see text, page 511).

The Portuguese have always been a warlike and proud people. The spirit of that first democratic assembly, even when under seeming eclipse, has never been wholly lost. That spirit finally drove out the Moslems and extended their language beyond its natural frontiers. It rendered Portugal in the fifteenth century the foremost maritime, commercial, and colonial power in the world. It sent Diaz, Da Gama, and Magellan across many seas and demonstrated the earth a sphere by circumnavigation. The same spirit today fired the sons of Portugal to act their valiant part on the fields of Flanders and made them copartners in sacrifice and victory.

Camoens, the preëminent writer of Portugal, inspired by love of country, in the "Lusiads" embodied the romantic "epic of discovery" and shaped and stabilized the Portuguese language. Literary Portuguese is still called "the speech of Camoens." His work, though less creative than that of Dante, is no less permanent.

THE SPANISH *

The peninsula writhed beneath the heel of the Moslem for eight hundred years. No other people has incarnated a national tragedy so prolonged. The Portuguese farther west suffered less in the intensity of the struggle, which wrought itself into the soul of the Spanish character. To this day Spanish peasants address one another as *caballero*, or knight. The struggle produced that rigor and intensity of religious conviction which found expression in Torquemada and the Inquisition and which could not endure peoples of alien faiths, like the Jews and Moors, on Spanish soil.

Ferdinand and Isabella, joint sovereigns of reunited Spain, inflicted the final overthrow upon the Moslems at Granada in 1492.

From that camp at Granada Columbus, commissioned by the Queen, went forth to the voyage that brought to Europe the New World. To the Spanish and the Portuguese of right belong the greatest glory for the epochal discoveries of that marvelous generation. Other nations emulated, but could not equal, their achievements upon the sea.

The decline of Spain from her preëminence and the suppression of Portuguese independence resulted from the reign of Philip II, great-grandson of Ferdinand and Isabella.

The many invasions of the peninsula had contributed many additions to the original

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Romantic Spain," by Charles Upson Clark (March, 1910).

Iberian race. The Christian kingdoms developed individual differences of habit and character. So did every province or district.

In the extreme south, Andalusia, whose name survives from Vandal conquerors, has been partly or wholly occupied by Phœnicians, Carthaginians, Romans, Vandals, Suevi, Goths, Jews, Moors, and Arabs. There has developed an Oriental type, handsome and languorous, good-tempered and ready-witted.

The Asturians may well be proud. Their mountain fastnesses were the only region in the whole peninsula which the Moslems were unable to subdue. The Cave of Covadonga, whence the Christian reconquest of Spain began, is sacred like the Swiss Cave of Rütli. Since 1388 the title of the heir to the Spanish crown has been Prince of the Asturias, and after coronation the king becomes Count of Covadonga. Isolated, hard-working, thrifty, yet by taxation and harsh land laws kept always landless and poor, they retain their spirit of independence and their pride of history and race.

Among the Catalans one often remarks blue eyes, flaxen hair, and light complexions, atavistic indications of Gothic ancestry. The language spoken differs from other Spanish, being partly a decayed dialect of Provençal. In it the troubadours, after expulsion from France, sang their last songs. Catalonia is a hive of universal and well-directed industry. The large-minded enterprise of the Catalans has made Barcelona, in spite of natural obstacles, a city of 630,000 inhabitants and the commercial and industrial capital of Spain. They are notable for their revolutionary spirit and their instant opposition to whatever savors of reaction.

The Castilians occupy the vast territories around Madrid. Theirs is the purest Spanish, the medium and the test of literary excellence. They are haughty, cultured, lovers of the arts. The knightly Admiral Cervera was a Castilian. Cervantes and Lope de Vega, Velasquez, and Murillo are great names of Spanish literature and art.

The fifteen Balearic Islands have 320,000 inhabitants, all Spanish. The Moors, who held the islands over four hundred years, have left a marked impression on the physical appearance, habits, and language of the people. The language is also mixed with Provençal.

As the Spanish and Portuguese together share in amity the largest of the Mediterranean peninsulas, so do their children share the larger part of the Western Hemisphere. From the Rio Grande del Norto to the extremity of Cape Horn, all Mexico, Central America, and South America, except the Panama Canal Zone, occupied by the United States, and British-Dutch-French Guiana, are dominated by the languages and the civilization of Portugal and Spain.

Brazil, which includes nearly one-half this area, and joined the Entente Allies in the recent war, is Portuguese. The other States are Spanish.

A SEÑORITA OF SEVILLE

This devotee of Terpsichore is a graduate of one of the finest dancing academies of Europe, for Spaniards, like the Russians before the war, pride themselves upon the thoroughness with which their professional dancers are trained.

THE FRENCH *

The French have the most distinct personality of any people of Europe. This is partly

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "The France of Today," by Major General A. W. Greely (September, 1914); "The World's Debt to France" (November, 1915); "The Beauties of France," by Arthur Stanley Riggs (November, 1915); "The Burden France Has Borne," by Granville Fortescue (April, 1917); "Our First Alliance and Our Second Alliance," by Ambassador Jusserand (June, 1917); "In French Lorraine," by Harriet Chalmers Adams (November-December, 1917), and "Our Friends the French," by Carl Holliday (November, 1918).

Photograph from Ruth Kedzie Wood

PORTUGUESE HUSBANDMEN AND A TEAM OF OXEN IN THE MINHO DISTRICT OF THE IBERIAN REPUBLIC

In this section of Portugal the oxen rather than the peasants wear a distinctive "native costume," in the form of a wide, upstanding yoke, or *canga*, elaborately carved. This primitive masterpiece of woodwork usually bears the date of its completion and a cross carved in one corner. On the pole, or peg, rising between the huge branching horns of the draft animals the peasant hangs his jacket, his dinner pail, and his shoes.

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HOW THE SPANISH MILKMAID GUARANTEES HER CUSTOMERS AGAINST A PUMP-DILUTED PRODUCT

The scene is a street corner in the residence section of the famous city of Valencia. In the veins of the inhabitants flows the blood of many races which have occupied this region—Iberians, Greeks, Carthaginians, Romans, Visi-Goths, and Moors. The Moorish influence has been particularly tenacious, both in the features and in the dialect of the people as well as in the architecture of the city. The first printing press in Spain is said to have been set up here in 1474.

due to the complexity of their origin and to the unique situation of the country they inhabit. They are the product, through centuries of development, of the basic element, the Celt, early permeated by the civilization of the Greco-Latin and later supplemented by the Teuton. To no other European people have three great races so contributed their best. These contributions are not merely united, but ingrained in the Frenchman's fiber.

France is a territorial belt connecting central and southwestern Europe. Situated between the Atlantic and the Mediterranean, its rivers flow into both. Hence it becomes the natural thoroughfare of commerce and ideas. No great idea has taken possession of the world without either originating in or passing through France. Ideas born elsewhere have been carried in France to their fullest development.

All Frenchmen do not speak French. At the

extreme ends of France are four small groups whose mother-tongue is another language—the 200,000 Flemings near the Straits of Dover; the 200,000 Basques in the far southwest; the 250,000 Catalans in the eastern Pyrenees; and 1,000,000 Bretons in Brittany—all equally patriotic children of France.

The Bretons are Celts. Their rugged peninsula was formerly called Armorica. The influx of Britons from Greater Britain, escaping from the Angles and Saxons, more than doubled the inhabitants and bestowed the present name. The area of the peninsula is less than 10,000 square miles; yet in no other region of equal size upon the globe are speakers of a Celtic language in the majority, and here they are constantly decreasing.

Some recent ethnologists, basing their conclusion on skulls found in the country, question whether the Bretons are Celts at all. Until more convincing arguments to the contrary are presented, one is justified in reckoning the Bretons as worthy members of the Celtic race. They are simple and untutored, conservative, religious, fearless, independent, and picturesque.

The Langue d'Oui and Langue d'Oc, noted upon the map, do not signify merely local mediæval differences in the manner of saying *yes* in French. Both are legacies—one from the Merovingian Frankish kingdom, which reached no farther south than the Loire, and the other from the Visi-Gothic kingdom, which spanned the Pyrenees along the eastern coast of Spain, and, above all, from Provence, the Roman Provincia. The two coincide with the physical and temperamental distinctions which characterize northern and southern France.

To the ethnic composition of the latter not only Celts, Latins, and Teutons have contributed, but prehistoric Ligurians, Phœnician and Greek colonists, and Moors and Saracens from Spain. The dialect hence developed, flowing, exuberant, tempestuous, became the fit instrument of the troubadour and of early romance.

But that other dialect, which began in a little island of the Seine, where once all of Paris was included, was becoming the real French. Were all histories of France destroyed, the whole story would survive in the successive phases of the Langue d'Oui. In 1519 Francis I decreed that Parisian French, already the popular speech, should be the official language of the land. Exact, concise, capable of every shade of polite inflection, it speedily took its place as the organ of diplomacy and of international relations.

It has been said that "the French language made the French nation." More truly, each made the other, and they struggled to maturity side by side. The language is the Frenchman put into speech—clear, sociable, attractive, sympathetic. So, four hundred years ago, the most cosmopolitan of travelers, Marco Polo, desiring in his Genoese prison to secure the attention of the world, decided that French was the fit language in which to write the story of his wanderings.

Mention anywhere the French today. One will not think of their literature or science, unsurpassed, or of their immense achievements in every field of thought and industry—of Pasteur, Lavoisier, Cuvier, Bichat, Voltaire, Rousseau, Rosa Bonheur, Molière, Racine, Corneille, Victor Hugo, Balzac, Ampère. Instead, a picture will rise before the mind, pitifully inadequate and incomplete, of the men and women of France during these last interminable years. A glory rests upon them, transcending all the glory of their past.

A great poet, not a Frenchman, once wrote: "France is the soldier of God." For more than fourteen centuries she has seemed to act, to fight, to conquer for the world. On her soil, and very largely by her sons, were fought the decisive battles of Chalons (451), which broke the power of the Huns; of Tours (732), which overwhelmed the Moslems; of Valmy (1792), which began "a new era in the world's history"; and of the Marne (1914 and 1918), which crushed a foe more relentless and more frightful than Moslem or Hun.

Humanity is debtor to the French until the end of time.

THE BASQUES

The Basques are an interesting people who live on both sides of the central Pyrenees in France and Spain and on the southeast shore of the Bay of Biscay. They number not far from 700,000, of whom more than 100,000 have emigrated to America, mostly to Argentina and Chile, and, unfortunately, few to the United States.

They name themselves Eskualdanak, possessors of the Eskuara, their native tongue. This language, utterly apart from the other languages of Europe, is a puzzle to philologists. Some think its grammar suggests the Magyar and Finnic. Others consider it a modern form of the otherwise extinct Iberian. They use the Latin alphabet and can speak either French or Spanish. Their origin is lost in obscurity.

Devoted children of the Roman Church, they, nevertheless, allow their clergy no influence in political or municipal affairs. Priests and lawyers, as supposedly inclined to despotism, are not eligible to their junta. Conservative, proud, and self-respecting, they are tenacious of their rights and deferential to women.

The common saying, "Every Basque a noble," is justified by the character of the people. Of splendid physique, they are tireless workmen, expert seamen, brave and capable soldiers. From Bilbao, their industrial center, we derive bilbo, Old English for sword. Bayonne, another Basque city, gives us the bayonet.

Ignatius Loyola, founder of the Jesuit Order, and Saint Francis Xavier, the illustrious missionary, were Basques. The latter, however, with bluish gray eyes, fair hair and beard, hardly five feet tall, did not in physical appearance resemble his darker, stalwart countrymen. Marshal Foch, Generalissimo of the Allied forces, is a more typical Basque.

Photograph by Emil P. Albrecht

THE ROSE WINDOW IN THE CATHEDRAL OF STRASSBURG, FRANCE

"And storied windows richly dight,
Casting a dim religious light."—*Milton.*

This famous church, the pride of the capital of Alsace, was begun in 1176. The name of the architect of the nave, begun in 1250 and completed in 1290, is unknown, but it is certain that he was a diligent student of French architecture, for the resemblance to the church of St. Denis (finished in 1231) is marked.

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A GREAT POET, NOT A FRENCHMAN, ONCE WROTE: "FRANCE IS THE SOLDIER OF GOD"

"For more than fourteen centuries she has seemed to act, to fight, to conquer for the world" (see text, page 522). All of these heroes helped in the defeat of Prussianism. In the front row, from left to right: Marshal Foch; General Pershing; Madame Dubail, wife of the military governor of Paris; Marshal Joffre; General Dubail, the military governor of Paris, and his son; General Pelletier and General Galopin in the rear, to either side of Marshal Joffre.

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MEMBERS OF THE FRENCH ARMY OF OCCUPATION IN METZ WELCOMED BY THEIR COMPATRIOTS, NOW DELIVERED FROM GERMANY AFTER HALF A CENTURY

Poilus in the French army of occupation were received with joyous acclaim by the people of Alsace-Lorraine, the once lost provinces of France now restored. These provinces embrace a territory less than half as large as the State of Maryland. The population in 1910 was 1,874,014. According to David Blumenthal, formerly mayor of the city of Colmar, this population includes 1,500,000 Alsaces-Lorraines of French descent who themselves or their parents were born in Alsace-Lorraine before May 1, 1871, and who, except for the Treaty of Frankfort, would have been French. The aliens (notably the Italians, French, Swiss, and the people of Luxembourg) make up a contingent of 75,000. The rest, 300,000 in all, are German immigrants since the war of 1870-71 and their descendants.

Photograph by A. W. Cutler

AN IRISHMAN OF THE "OLD SCHOOL"

Although he has appropriated the English language, the Irishman remains a typical Celt—typical in habit of mind, in disposition, character, and to a degree in personal appearance. The subject of this illustration, at the age of 83, walks from his home to Galway and return every Thursday, a distance of 10 miles. He clings to the costume of a bygone day. Many of our readers saw this picturesque regalia worn by the Irish division in the great 1918 Fourth of July pageant of the foreign born, held in the National Capital.

THE BELGIANS*

THE WALLOONS AND FLEMINGS

The Kingdom of Belgium dates from 1830, when the seven Catholic provinces revolted from distasteful union with the Kingdom of the Netherlands. A spirit of independence, of resentment at injustice, of determination to maintain rights, has always animated this heroic people.

The ancient Belgæ occupied all Gaul from north of the Seine and west of the Rhine. Rheims, Soissons, Amiens, and Beauvais perpetuate the names of the Remi, Suessiones, Ambiani, and Bellovaci, their warlike tribes who fought against Cæsar.

The Belgians now comprise two main factors—the Walloons and the Flemings.

The Walloons, from a common Teutonic word meaning foreign, are found in southern Belgium, where are Liège and Namur upon the Meuse; in the French department of Nord, with its cities of Lille, Douai, Cambrai, and Valenciennes, and in a few Rhenish villages. They speak French and have a strong attachment to France.

The Flemings are more numerous and occupy the greater part of the kingdom and of the coast of Nord, with Dunkirk. They speak Flemish, a German dialect. Originally German in lineage, they are above all intensely national and have equalled the Walloons in courage and devotion. During the last war the Germans resorted to every artifice to alienate them from the Walloons, but without avail.

In 1910, of the 7,571,000 Belgians, 3,221,000 spoke only Flemish, 2,833,000 only French, and 871,000 both French and Flemish. The Belgian Government at first opposed official use of Flemish, but in 1878 it was made equal with French in the courts and administration and in 1883 in the schools. The Flemish provinces were made bi-lingual.

Full religious liberty is enjoyed. The great majority of the people are presumably Roman Catholic, but since 1891 no questions are asked at the census regarding communion or profession.

At the beginning of the world war, in 1914, the area of the kingdom was 11,373 square miles. A Conference of the Great Powers in 1831 determined the boundaries between Belgium and the Netherlands. Though obliged by circumstances to recognize Belgian independence, the Conference did not sympathize with the authors of a revolution. In consequence, the boundary line was traced to the disadvantage of the Belgians. To the Dutch were assigned peoples east of the Meuse, who were strongly pro-Belgian; also both banks of the Scheldt, thus cutting off approach by sea to the great port of Antwerp except through Dutch waters. One cannot doubt that this injustice will be rectified.

Sixteen years ago in his "Living Races of Europe," Hutchinson said: "Bravery, intelligence, and energy are strong as ever in the Belgians. They excel in the arts of peace, as formerly they were proficient in the arts of war. They now present an attractive picture of a prosperous, peaceable, and thoroughly comfortable little people."

The first two sentences are still true, only intensified. The picture of the last sentence it is the privilege of Europe and America to restore.

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "Belgium the Innocent Bystander," by William Joseph Showalter (September, 1914), and "Belgium's Plight," by John H. Gade (May, 1917).

THE IRISH

The word Irish is derived by successive steps from Erin, an early and now purely poetic name for Ireland.

Myths and legends are handed down regarding the origin of the Irish, but little is known of them with certainty before the fifth century. Then they were emerging from the control of the Milesians, who had come no man can say from where, and who apparently had long held the greater part of the island in subjection.

The Irish, like the Gaelic Scotch and the few inhabitants of the Isle of Man, belong to the Goidelic or Gaelic branch of the Celtic family. This Celtic element is the permanent fact in Irish character and the controlling fact in Irish history. None the less, it is true that few peoples are more composite than the Irish. Into their structure are built the English, Scotch, Welsh, Danish, Norwegian, and French. Exterminating wars, forced expatriation, enlistment of more than 400,000 Irishmen in European armies during the space of sixty years, drained the native population. Colonization, many times repeated, brought in hosts of foreigners, and must, of necessity, have disturbed the equilibrium of racial life.

And yet, the Irishman has absorbed the blood of them all and appropriated the language of his conquerors, remaining all the while a typical Celt—typical in habit of mind, disposition, character, and to a great degree in personal appearance.

Something in the Irish nature seemed to attract the strangers who dwelt in his midst. During the first four centuries after the English conquest the English settlers of the island, whether of low or high degree, adopted Irish ways, intermarried with the Irish, and adapted their own names to Irish forms. Many of the Irish names, heard most often, can be traced back to such a source. Nor did this tendency entirely cease, even after the religious rancor engendered by the Protestant Reformation.

The Irish were always religious. For six hundred years their country was known as "The Isle of the Saints." While Latinized lands seemed sinking back into pagan barbarism, the Irish were founding schools and sending missionaries to Scotland, England, Wales, and over western Europe. Saint Patrick, who

Photograph by Paul Thompson

WELSHMEN: RACE BROTHERS OF THOMAS JEFFERSON AND DAVID LLOYD-GEORGE

The record of Welsh soldiers in the world war makes universal the realization that they are of a stock worthy of their indomitable ancient ancestry. They are democratic, rugged, serious, sturdy to obstinacy, and uncompromising in the defense of their rights.

Christianized Ireland by persuasion, established at Armagh a school attended by seven thousand students. Saint Columba created at Iona, in the Hebrides, monastic seminaries, a stronghold of Christian teaching, thronged by foreign youth, who carried back to less favored countries this light from the West.

The Irish Christians, long unconnected with Rome, afterward became devout Catholics. The vigorous efforts of Henry VIII and of some of his successors to force Protestantism upon them only embittered resentment. Had the English remained Catholic or the Irish become Protestant the heat of later difference might have been partly prevented. The settlement of English and Scotch colonists in the northeast corner of the island further complicated the situation by the introduction of a hostile religious element.

Of the Irish in Ireland, 3,243,000, or three-fourths of the entire number, are Roman Catholics. The more than a million Protestants are members of the Protestant Episcopal and Presbyterian churches.

The homeland of the Irish has an area of 32,586 square miles. How nearly one, geographically, are the appropriately called Emerald Isle and Great Britain few persons appreciate. The width of the shallow North Channel, between the Mull of Cantire (Scotland) and Torr Head, is only 13½ miles. The Irish Sea, between Dublin and Holyhead (Wales), is less than 70 miles across, and St. George's Channel, at the southern extremity, is less than 50 miles wide.

Irish, "the classic language of the Celts," is fast yielding place to English. Spoken in the middle of the last century by more than half the people, it is now spoken by less than one-seventh. The population is likewise steadily growing less.

There were a million more inhabitants in Ireland in 1801 than there are today. A very careful census was taken by the British Government on the Act of Union to determine the number of representatives in Parliament to which Ireland was entitled on a basis of population. The number thus determined was made permanent, because the government wanted the Irish to feel that they would never have less representatives than then, and also because it was believed that the Irish, being prolific, might have in time an inconveniently large number of representatives in Parliament. As it turned out, however, at present Ireland has one representative for about every 42,000 people and England one for about every 70,000 people. Scotland, with several hundred thousand more inhabitants, has about two-thirds as many members of Parliament as Ireland.

"The claim of blood was the strongest which the ancient Celt knew." There is nothing finer or more Celtic than the devotion of the Irish in foreign lands to their kin at home.

The exuberant nature, the sometimes flighty purpose, the impractical attempt, the daring, generous spirit, the faithful and sympathetic nature, the courtesy and the quickness, the love of poetry and song, mark alike the ancient and the modern Celt. None but a Celtic soul would have chosen the harp as its national emblem.

THE BRITISH *

The names, Englishman, Scotchman, Welshman, are historic, each invested with precious traditions of its own. Yet each is a local appellation, fitly associated with a limited area in an island that itself is small. Because Englishmen form the majority in the island, the mistake is often made by foreigners of speaking of the "English ambassador," "the English army," "the English navy," when in fact there is no such thing. "The meteor flag" is not the symbol of a petty insular distinction, but of the British race. In the larger personality of the Britisher the Englishman, the Scotchman, the Welshman, and many an Irishman are lost and forgotten.

THE WELSH

The Welsh formerly held possession of all the western coasts of Britain from the mouth of the Severn northward for three hundred miles. They are now found chiefly in the Principality of Wales. Though amalgamated with a far more numerous people, they possess a distinct importance of their own.

Together with the Bretons of Britanny in France and the Cornish, now absorbed in the main English body (the Cornish language has been unspoken for over one hundred years), they constitute the Brythonic group, or one-half of the once great Celtic family. Brython is the name under which the Welsh include themselves and the ancient Britons.

In spite of the marked revival of Welsh literary effort in the eighteenth and nineteenth centuries, the Welsh language is steadily giving way before the English. In 1911 only four-tenths of the two million Welsh could speak their Celtic tongue at all. Thirty years earlier it was in daily use by seven-tenths of their people.

There was no horror of invasion, no form of resistance, no phase of alternate victory and defeat, which, from the time of the Romans, for centuries the Welsh did not undergo. Finally Llewelyn submitted to Edward I in 1277. The heir to the English throne was to bear the title of Prince of Wales, and the grandson of the Welshman, Owen Tudor, become King of England as Henry VII and found the Tudor dynasty. Shortly afterward

* See also, in NATIONAL GEOGRAPHIC MAGAZINE, "England: The Oldest Nation of Europe," by Roland G. Usher (October, 1914); "Channel Ports and Some Others" (July, 1915); "London," by Florence Craig Albrecht (September, 1915); "One Hundred British Seaports" (January, 1917); "What Great Britain is Doing," by Sydney Brooks (March, 1917), and "What the War Has Done for Britain," by Judson C. Welliver (October, 1918).

Wales was incorporated with England and its people have since enjoyed all English rights and privileges.

The Welsh inherit all the higher characteristics of their indomitable ancient ancestry. They are democratic, rugged, serious, sturdy to obstinacy, insistent on education, religious in the highest sense, and uncompromising in defense of their rights. They have given the world Thomas Jefferson in the United States and David Lloyd George, Prime Minister of the United Kingdom.

THE SCOTCH

A peculiar charm attaches to the word Scotland. No land is more the synonym of poetry and romance. Its every river and lake has swelled with the lifetide of freedom and its austere mountains are monuments of deeds as imperishable as themselves.

Beyond conjecture, no information exists regarding the origin of the Picts, its first known inhabitants, the formidable antagonists of the Romans. When the Scots, a Celtic Irish people, arrived, they found the Picts in possession. From the Scots the country, originally known as Hibernia, was called Scotland, while the name Hibernia was transferred to Scotia, which Ireland was called from the third to the tenth century. Thus, curiously, the two countries exchanged names.

The Scots and Picts combined in raids upon the Britons, who implored the dangerous assistance of the Northmen. Bands of other Northmen rushed in all along the coast. Gradually two Englands emerged; one generally corresponding to modern England as far as the Humber and one situated north of the Humber and extending far beyond the Tweed. Similar bands of invaders, speaking a like English in the making, formed both and were mutually unfriendly and suspicious. The northern kingdom was persistently loyal to the Pictish kings, who themselves paid nominal homage to the King of England.

The northern kingdom, planted athwart the middle of the island and occupying its most fertile and prosperous part, was inhabited by a resolute people who were never conquered, not even by the Normans. Its position determined the subsequent events of English and Scottish history. The fierce border raids, the aggressions of the English crown, and the frequent wars, Sir William Wallace, Robert Bruce, Bannockburn, and Flodden, were natural results.

The inhabitants were early Christianized, as were the Picts, by Irish missionary monks who acknowledged no dependence on Rome. Thus early was imparted that bent toward religious independence and with it that tendency toward personal examination which have illustrated Scottish character. Though in time they were to enter the Roman communion, there never was any change, either as Catholics or later as Protestants, in the attitude of the free-thinking Scottish mind.

The Highland Scots absorbed the Picts, but were harassed and weakened by repeated incursions of the Northmen, who forced them farther inland and themselves occupied all the coasts. They peopled also the Shetlands, Orkneys, and Hebrides. To the northern county of Scotland, as south of Norway, they gave the name of Sutherland, which it still retains. Except in the mountain fastnesses, Norse crowded out the Gaelic and, though no longer spoken, left many place-names and memorials of its one-time supremacy.

The sharp division of the Highlands and Lowlands has profoundly affected the life of the country. Of different race and language, the inhabitants of each section long regarded the other with condescension approaching disdain. Both are equally Scotch in pride of ancestry and national feeling. Both in marked degree are of composite racial stock, though in the Highlander the Celtic element and in the Lowlander the English element predominates.

The steady progress of the English language contributes to assimilation. Today less than one-twentieth of the Scotch can speak Gaelic and only one-tenth of that twentieth speak Gaelic only. In all the Shetland and Orkney islands, only 120 persons speak Gaelic at all. Gaelic is, however, predominant in the fast depopulating Hebrides.

The Scotch in general are thrifty, cautious, and frugal. But no people are more just, more generous, more quick to imperil life or property or position at the call of duty. Nowhere are there more incisive minds. Nowhere is the reasoning faculty more developed. A Scotch name is significant of sterling qualities of heart and character.

There is no high place of philanthropy, statesmanship, or world achievement that Scotchmen have not filled—Walter Scott, Carlyle, Hume, John Knox, Robert Louis Stevenson, Alexander Graham Bell, Watt, Robert Burns, Gladstone, Balfour, Bryce, Haig, and Beatty.

THE ENGLISH

It is said that the Arabic words in English (such as algebra, alchemy, coffee, alcohol, etc.) have exercised more influence on the language than all the Celtic words in the vocabulary. However, the words, Britain and British, come from the name the Celts themselves gave the island. Names of hills and rivers in England and those ending in ford (crossing), ton or don (farm) and ham (home) are almost all Celtic. Thus the Severn, Dee, Ouse, Thames, London, Epsom (Ebba's home), Horsham (Horsa's home), Oxford (ford of the Ouse) are daily unheeded reminders of the Celt. Otherwise Celtic hardly exists in the English language and still less in English blood.

The utter disappearance from England of the race that withstood the Romans and produced Boadicea and Caractacus is surprising. Probably the sea-kings were by nature no more cruel than the barbarians of the continent. But the Celts, or Britons, were obstinate, numer-

Photograph by William Reid

A YOUNG SCOT

In the race name "Scotchman" this kilt-clad boy possesses a priceless heritage, for it is synonymous with sterling qualities of heart and character. "The Scotch in general are thrifty, cautious, and frugal. But no people are more just, more generous, more quick to imperil life or property or position at the call of duty."

ous, and powerful, while the bands of sea-rovers were small, not united, and in the utmost peril. Only by terrorism or extermination could they overcome the Britons. Green states that "when the conquest of the bulk of Britain was complete," one hundred and twenty-eight years after Hengist and Horsa landed at Ebbsfleet, "not a Briton remained as subject or slave" in the conquered territory.

According to the Saxon chronicler, in 800, Egbert, the first king of the country for the first time united, decreed it should henceforth be called Anglia, or England. Then followed two hundred and fifty years, filled by ever fresh invasions and by the illustrious names of Alfred the Saxon and Canute the Dane.

At last, on the field of Hastings all those racial elements were in presence on which the future of England depended: the English people with its character forged by six centuries of incessant and desperate struggle; and the Normans, no less strenuous and valiant, but tempered into finer steel by two centuries of residence in France. For hours after the battle was lost the English fought on around their dead king, and for years from retreats in the forests and hills they broke forth in fierce, hopeless rebellion.

Not until the Hundred Years' War with France were the English people and the Norman conquerors welded into one and the Norman-French replaced by English as the language of law and the court.

Crowds of later immigrants, like the fugitives from the Netherlands and the Huguenots from France, were to increase England's industrial strength, but not to impair or modify her racial stock or character. It was the forces that clashed at Hastings which, after generations of stress and struggle, culminated in the greatness of the modern Englishman.

Painting by Abel Boye

THE DAUGHTER OF A RACE OF EMPIRE-BUILDERS

An English girl, hers is the language of two hundred millions of the world's inhabitants; her forefathers were the champions of liberty, winning the Magna Charta on the field of Runnymede; her brothers of the British Isles, of North America, of Australia, New Zealand, and South Africa do now and will keep the faith—defending the weak, succoring the needy, maintaining order, and advancing the day of which her poet laureate sang:

"One God, one law, one element,
And one far-off divine event,
To which the whole creation moves."

It is common to speak of the English as an Anglo-Saxon people, though the expression is false and misleading. All Anglo-Saxons are English but multitudes of the English are not Anglo-Saxon. In his ode to Alexandra, Tennyson strikes a truer note, "Norman and Saxon and Dane are we"

The main work of the Saxon was accomplished in the occupation and populating of Greater Britain. He furnished the basic mass of a vigorous, resolute, enduring people. The Scandinavian, who was Norseman, or Norman, was the most independent and venturesome of all the early makers of modern Europe. Through the vast expanse of land and ocean, from Russia and the Black Sea to remote Iceland and Greenland, there was no region which his passion for discovery and conquest did not attempt. The English, sprung from the loins of the Anglo-Saxon and the Norman, inherit whatever was best in their progenitors.

Unparalleled achievements on land and sea, the building of an Empire in comparison with which the Roman Empire was small, creation and development of Magna Charta and of constitutional government and law and, as basis and compeller of such achievements, the grit that brooks no defeat, are the contribution of no single tribe or group of ancestors but proceed from the combined spirit of what is enduring in them all. A brilliant Frenchman finds the key to English character in the one word, "self-reliance."

This war has not created the Englishman. He is no different now from what he was before it began. It has simply afforded fresh revelation to himself and to us of what he is: Often arrogant, but seldom vain; fair in fight and just in victory; warm-hearted under a cold demeanor; fundamentally conservative when most radical; insular and narrow, yet with the genius of world-rule; seldom loved abroad, but loved and lovable at home; despising meanness and deceit and himself loyal to the last.

Were the Italians, the French, and the British to enter into comparison, no jury could be found competent to determine which stood foremost in the products of the intellectual life. There is, however, one transcendant name, an English name, though it seems not so much to belong to one race as to all races—Shakespeare, the interpreter of humanity, myriad-minded, and of all writers the most untranslatable and the most easily understood.

From the British Isles the British race, in circles ever widening, has encompassed the earth. More than any other race in all the past, it has carried with it civilization and equal opportunity and liberty. Under its protection in the farthest continents and seas its offspring have erected self-governing Dominions and Commonwealths, whose proudest inheritance is their British lineage and their British loyalty.*

* See also, in the NATIONAL GEOGRAPHIC MAGAZINE, "Great Britain's Bread Upon the Waters," by ex-President William H. Taft (March, 1916).

THE ENGLISH-SPEAKING PEOPLES

Its medium of communication is the English language, spoken by well-nigh 200,000,000 persons as their mother tongue. Those 200,000,000 as a body are the most enterprising, most wealthy, most intelligent in the world. No other language, even in China or Hindustan, is spoken by half as many.

Beside the enormous host of whom it is the birthright, its diffusion among other millions is rapidly increasing. One is startled as he hears it in the commands on Eastern steamers, or in interviews between foreign magnates, or in remote villages where presumably no British person has ever been.

In the heritage of that well-nigh universal language the American has his share. In the bonds and sympathies created by it he finds his kith and kin.

Eloquently were these inheritances recalled by the modest gentleman who presides over the British Dominions, in his address welcoming to Great Britain the President of the United States:

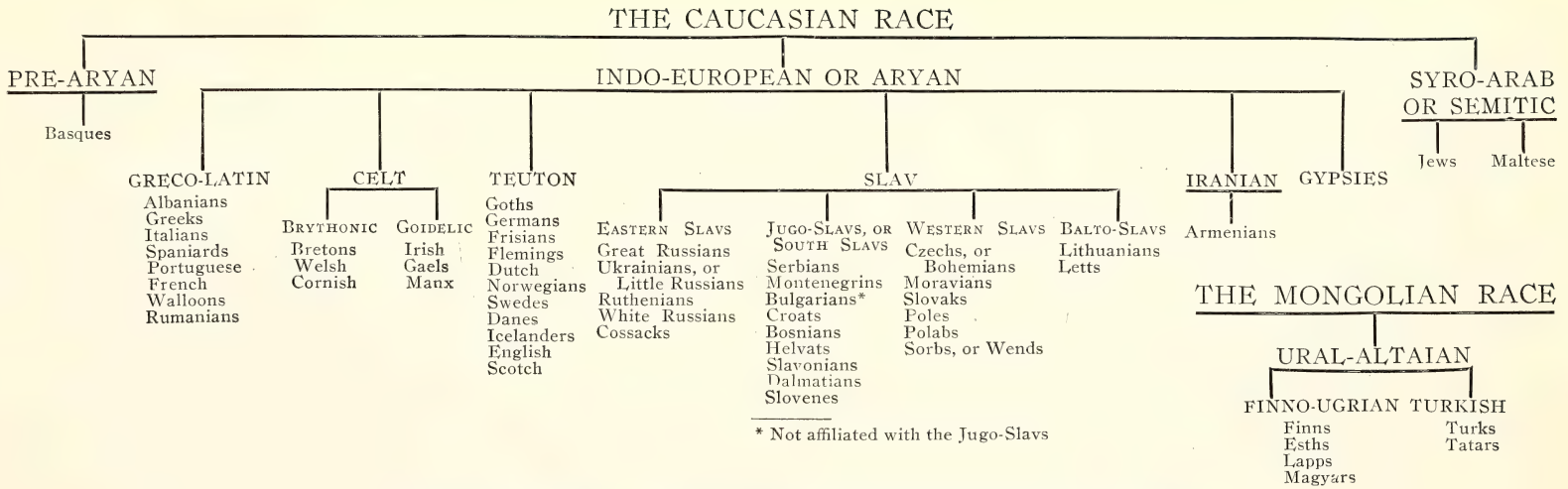
"We welcome you to the country whence came your ancestors and where stand the homes of those from whom sprang Washington and Lincoln. . . . You come as the official head and spokesman of a mighty Commonwealth bound to us by the closest ties. Its people speak the tongue of Shakespeare and Milton. Our literature is yours, as yours is also ours, and men of letters in both countries have joined in maintaining its incomparable glories.

"To you, not less than to us, belong the memories of our national heroes from King Alfred down to the days of Philip Sydney and Drake, of Raleigh and Blake, and Hampden, and the days when the political life of the English stock in America was just beginning. You share with us the traditions of free self-government as old as the Magna Charta.

"We recognize the bond of still deeper significance in the common ideals which our people cherish. First among those ideals you value and we value freedom and peace. Privileged as we have been to be the exponents and the examples in national life of the principles of popular self-government based upon equal laws, it now falls to both of us alike to see how these principles can be applied beyond our own borders for the good of the world."

In the goodly fellowship of the Entente Allies, British and Americans, for the first time in all their history, have bared their breasts side by side against a common foe. They have bled together as champions of those who cherish their own individual rights and respect the rights of mankind. No formal parchment, however drawn up and signed, could further strengthen and hallow such alliance of heart and purpose.

As General Pershing has well said in his report after the conclusion of hostilities, "Altogether it has been deeply impressed on us that the ties of language and blood bring the British and ourselves together completely and inseparably."



A DIAGRAM SHOWING THE RELATIONSHIP OF THE PEOPLES OF EUROPE

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OUR MAP OF THE RACES OF EUROPE

THE map accompanying this article, printed in 19 colors, gives a comprehensive picture of the general divisions of the races of Europe. Instead of employing colors merely to represent definitive ethnographic and linguistic territories, an effort has been made to enable the student to determine the racial affinities of distinctive groups by the relation of the shades of color themselves (for index see opposite page).

The four great trunk branches of the Indo-European, or Aryan, race are presented in four basic colors—brown for the Greco-Latins; yellow for the Celts; red for the Teutons, and green for the Slavs. The Greco-Latin subdivisions (Albanians, Greeks, Italians, Spaniards, Portuguese, French, Walloons, and Rumanians) are distinguished one from the other by the intensity of the brown shades. Likewise, the eleven families of common Teuton stock are represented by three shades of red. The great Slav group, with its eastern, southern, western, and Baltic subdivisions, is shown in green of varying shades.

The Basques, Pre-Aryan Caucasian people, are represented by blue, and their complete detachment from other races of Europe is emphasized by the fact that no gradations of blue are used to indicate the territorial bounds of any other people.

The purple patches which clutter the face of Europe signify the presence of the Ural-Altaians; the dark purple indicating the Turks, Tatars, and Kalmucks; the lavender marking the bounds of Magyar dominance, and the pale lavender showing the territory inhabited by the Finno-Ugrian Finns, Esths, and Lapps (see also page 448).

The land of the Armenians in Asia is represented by diagonal rectangles in a shade between the green of the Slavs and the yellow of the Celts.

AREAS WHERE CONTIGUOUS RACES INTERMINGLE

Hatchwork, of course, indicates areas where the contiguous races intermingle inseparably, as in northern and northeastern Italy, where German and Italian reside side by side; in western Ireland, Scotland, and Wales, where the Celts and the British mingle; in eastern Poland, where the Western Slavs (Poles) and the Eastern Slavs (Little Russians) reside together; on the border between eastern Lithuania and western Great Russian territory; and where Magyars, Tatars, Finns, and Slavs form confused racial masses throughout the dominion of European Russia.

This map represents a unique achievement in its unusual legibility, in its sharp definition of political as well as racial boundaries, shorelines and rivers, the clarity of its color key, and, withal, in the convenience of its size. A map of twice these dimensions would not show in greater detail any facts of importance, whereas this supplement enables the reader to study it closely as a whole instead of by sections.

An interesting feature of the map is the accuracy with which the racial islands are revealed, set amid seas of alien peoples. For example, it is important to note the two groups of German colonists set down in the midst of the mingled Little Russians and Rumanians in Bessarabia.

An important colony of Germans is also shown just to the north of Fiume. Close students of events in Europe during the last few weeks will recall that shortly after the signing of the armistice these Germans, entirely surrounded by Jugo-Slavs, announced that they would petition the Powers to permit them to set up a separate autonomous State, fashioned after the miniature republics of San Marino and Andorra.

The colors of this map show at once how extraordinary is such an appeal; for whereas the San Marinesi are the racial brothers of the Italians who surround them, and the Andorrans are similarly of the same blood and language as the Spaniards who encircle them, the red of this Teuton colony is seen to be in clashing

disharmony with the dominant green of the encompassing South Slavs. In other words, the colors tell their own story of the kinship of the races which they symbolize.

A MONOGRAPH OF PERMANENT EDUCATIONAL VALUE

Dr. Grosvenor's text, which elaborates the facts set forth in such graphic form by the map, constitutes, with the scores of illustrations, a monograph of permanent educational value and ever-recurrent human interest. The entire number is a fitting contribution to the important monographic library which the National Geographic Society is gradually creating for its members by issuing in magazine form such noteworthy numbers as "Flags of the World," the Larger Mammals of North America, the Smaller Mammals of North America, "The Land of the Best" (a bird's-eye view in text and pictures of the resources and advantages of America), and several numbers devoted to American birds.

"The Races of Europe" not only provides material of fascinating interest to the casual reader, but contains the authoritative groundwork for the student of the most intricate and at the present time the most vital problem which diplomatists, statesmen, and humanitarians have set themselves to solve.

It is confidently believed that this number of the GEOGRAPHIC will prove a work of lasting value; for however political boundaries in Europe may be changed by treaties or by conquest, and however ethnographic delimitations may be affected by migration and immigration, racial characteristics and traits are fairly constant from generation to generation and are materially modified only through the centuries.

EARLIER GEOGRAPHIC ARTICLES HAVING RACIAL SIGNIFICANCE

For the convenience of those readers of the GEOGRAPHIC who preserve their files, footnotes have been added under the various race headings in order that more detailed presentations of peoples and localities, described in earlier issues of the magazine, may be used for reference.

In addition to the articles thus enumerated, those who find the races of Europe a subject of engrossing interest will derive pleasure and profit from reading again such authoritative and entertaining articles as Col. Theodore Roosevelt's "How Old Is Man?" (February, 1916); "The Sea-kings of Crete," by the Rev. James Baikie (January, 1912); "From Jerusalem to Aleppo," by John D. Whiting (January, 1913); "Megaspelæon, the Oldest Monastery in Greece," by Carroll Storrs Alden (March, 1913); "The Resurrection of Ancient Egypt," by the Rev. James Baikie (September, 1913); "Village Life in the Holy Land," by John D. Whiting (March, 1914); "Where Adam and Eve Lived," by Frederick and Margaret Simpich (December, 1914); "Impressions of Palestine," by Viscount James Bryce (March, 1915); "The Gates to the Black Sea," by Harry Griswold Dwight, and "Homer's Troy Today," by Jacob E. Conner (May, 1915); "Venice," by Karl Stieler (June, 1915); "Historic Islands and Shores of the Ægean Sea," by Ernest Lloyd Harris (September, 1915); "The Cradle of Civilization," an account of Mesopotamia, by the Rev. James Baikie, and "Pushing Back History's Horizon," an account of archæological explorations in Assyria and Babylonia, by Albert T. Clay (February, 1916); "The Hoary Monasteries of Mt. Athos," by H. G. Dwight (September, 1916); "Lonely Australia," by Herbert E. Gregory (December, 1916); "Our Foreign-born Citizens" (February, 1917); "On the Monastir Road," a war-time picture of Macedonia, by Herbert Corey (May, 1917); "European Famines of the Past," by Ralph Graves, and "Letters from the Italian Front," by Ethel M. Bagg (July, 1917); "Andorra, a Unique Republic in the Pyrenees," by Herbert Corey (March, 1918), and "Under the Heel of the Turk," by William H. Hall (July, 1918).

Extra copies of this "Races of Europe" number, including the Map, may be obtained from the office of the National Geographic Society at fifty cents each.

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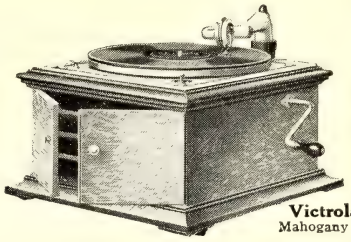

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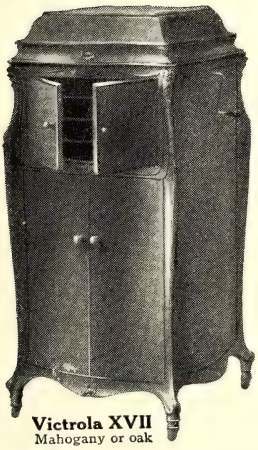

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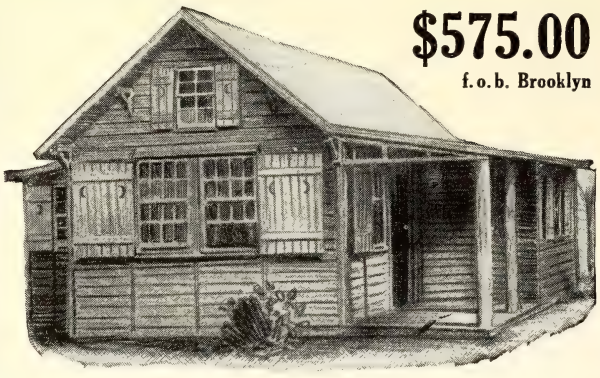

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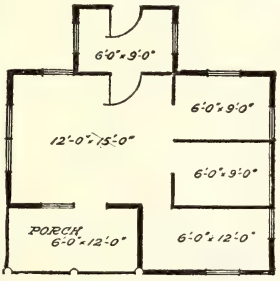

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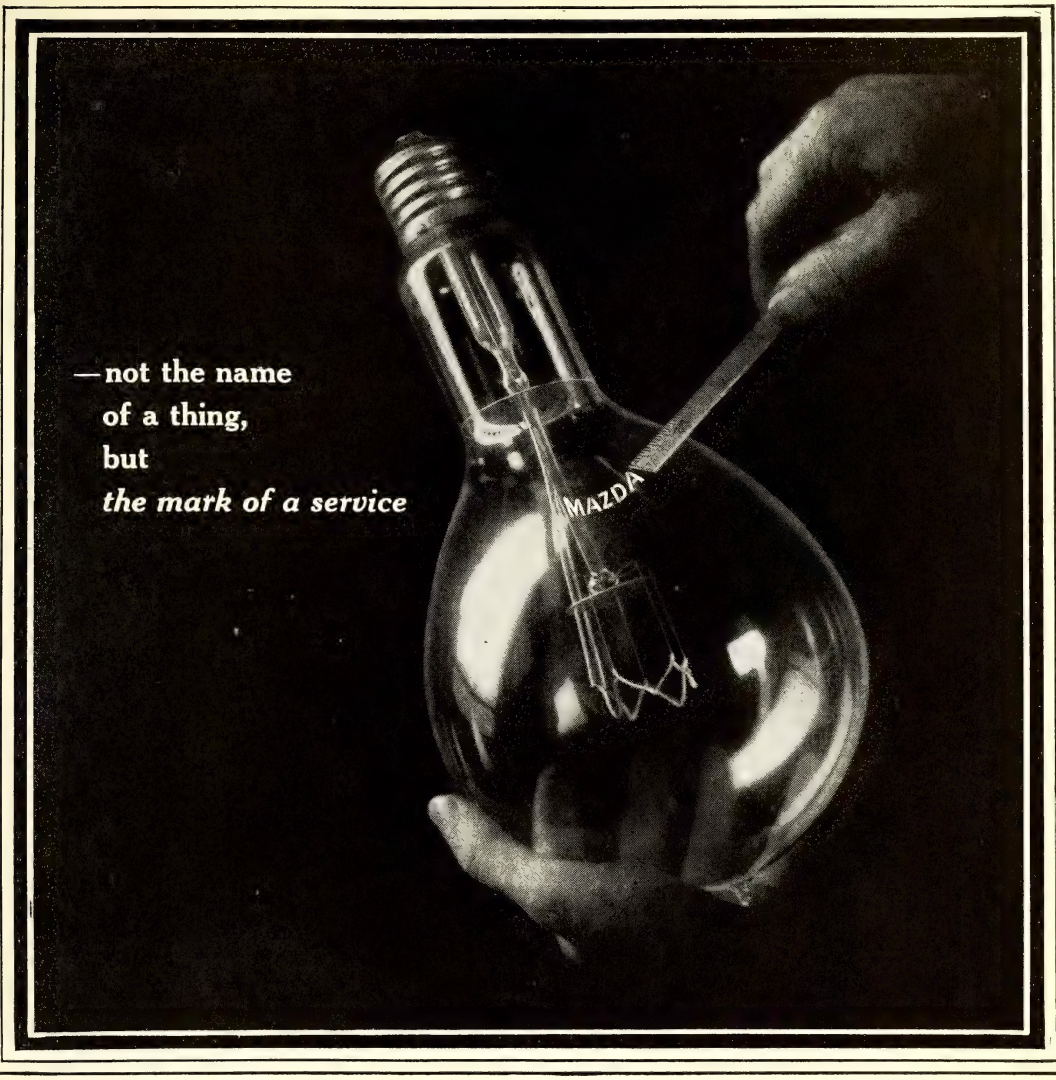

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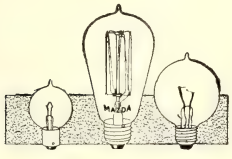

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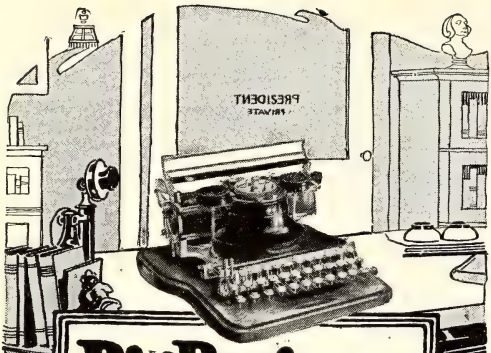

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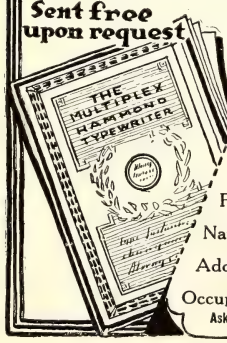

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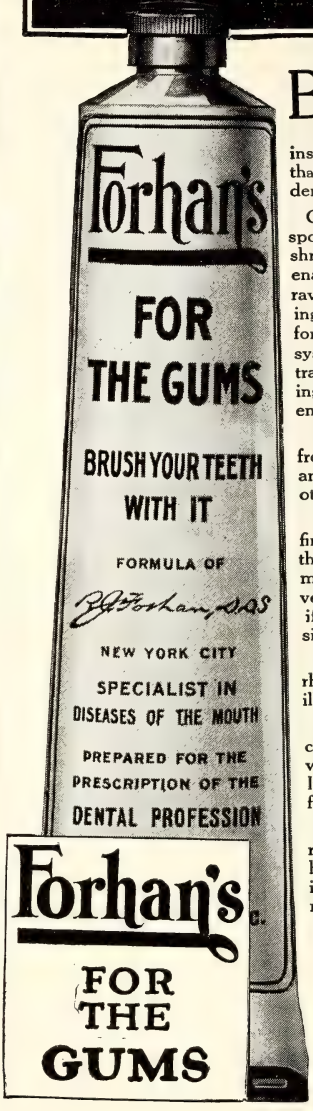

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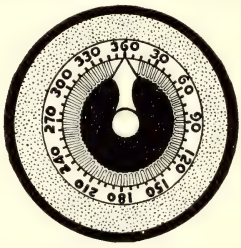

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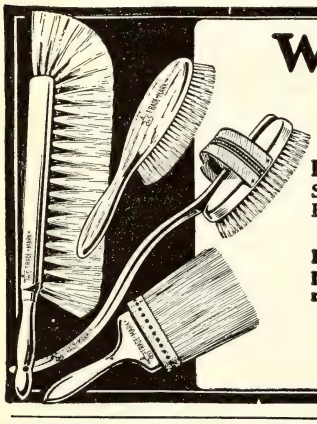

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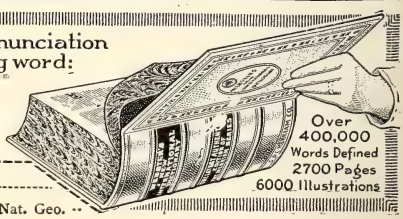

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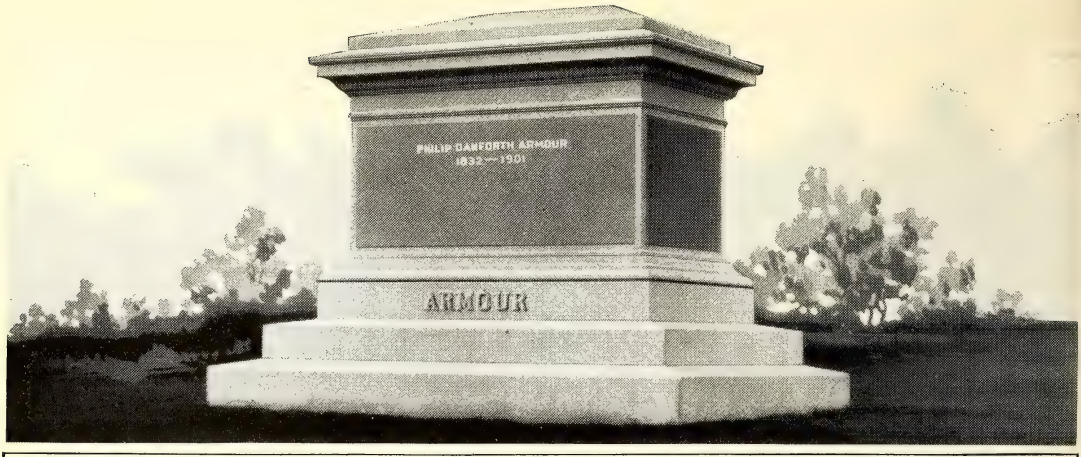

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